Homework and Remembering

HOUGHTON MIFFLIN HARCOURT

MATH Expressions

Common Core

GRADE 5

Volume 1

Cover Credit: (Cheetah) ©Stephen Meese/Alamy

Printed in the U.S.A.

ISBN: 978-0-547-82425-3

1 2 3 4 5 6 7 8 9 10 XXXX 21 20 19 18 17 16 15 14 13 12

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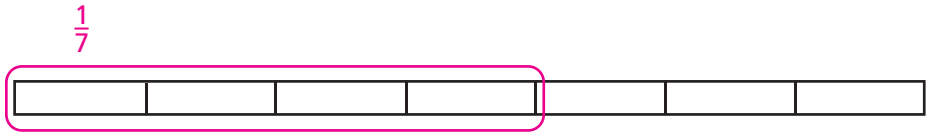
1-1

Homework

Name _____ Date _____

Use the fraction bar below for Exercises 1–4.



1. Label the first part of this fraction bar with the correct unit fraction.

2. Circle the first four parts of the bar. What fraction of the whole does this circled portion represent?

$\frac{4}{7}$

3. Write your fraction from Exercise 2 as a sum of unit fractions.

$\frac{4}{7} = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$

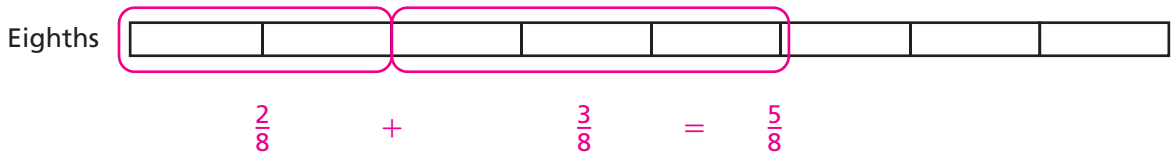
4. Represent the whole as the sum of the unit fractions.

$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{7}{7} = 1$

5. Solve the problem below by circling parts of the fraction bar. Write the appropriate equation below the bar.

Brett is building a fence around his yard. He has worked on it for two weeks so far. He finished $\frac{2}{8}$ the first week and $\frac{3}{8}$ the second week. What fraction of the entire fence has he built?

$\frac{5}{8}$



6. Nena thinks that because $4 < 6$, it must also be true that $\frac{1}{4} < \frac{1}{6}$. Explain to Nena why this is incorrect.

Possible answer: The 4 in $\frac{1}{4}$ means the whole is divided into 4 parts. $\frac{1}{4}$ is one of those parts. The 6 in $\frac{1}{6}$ means the whole is divided into 6 parts. $\frac{1}{6}$ is one of those parts. The more parts we divide a whole into the smaller each part will be, so $\frac{1}{6} < \frac{1}{4}$.

1-1 Name _____ Date _____

Remembering

List all the factors of each number.

1. 16 1, 2, 4, 8, 16
2. 29 1, 29
3. 33 1, 3, 11, 33
4. 40 1, 2, 4, 5, 8, 10, 20, 40

List the first four multiples of each number.

5. 6 6, 12, 18, 24
6. 11 11, 22, 33, 44
7. 15 15, 30, 45, 60
8. 1 1, 2, 3, 4

Complete.

9. $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$
10. $\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$
11. $\frac{6}{10} - \frac{5}{10} = \frac{1}{10}$
12. $\frac{4}{6} + \frac{2}{6} = \frac{6}{6}$, or 1
13. $\frac{4}{9} - \frac{2}{9} = \frac{2}{9}$
14. $\frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{3}{10}$

Write an equation. Then solve the problem. Equations may vary.

15. Maggie has a ribbon 27 feet long. What is the length of the ribbon in yards?

    Equation: $27 \div 3 = n$

    Answer: 9 yards

16. Mañuel has 15 goldfish. This is 6 more than Quinn has. How many goldfish does Quinn have?

    Equation: $n + 6 = 15$

    Answer: 9 goldfish

17. In their yearbook photo, students in the chorus stood in four rows with 13 students in each row. How many students are in the photo?

    Equation: $4 \bullet 13 = n$

    Answer: 52 students

18. Julie bought 19 beads at the craft store. Now she has 36 beads. How many beads did she have before she went to the craft store?

    Equation: $n + 19 = 36$

    Answer: 17 beads

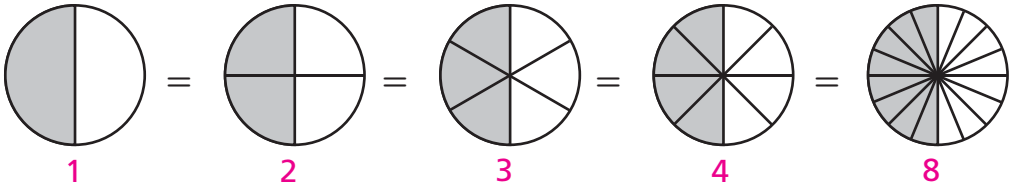
19. **Stretch Your Thinking** Rashid bought some baseball cards. After giving 7 cards to his friend Grace, he arranged the remaining cards in 6 rows of 4. How many cards did he buy?

    Equation: $n - 7 = 6 \bullet 4$

    Answer: 31 cards

Name _____ Date _____

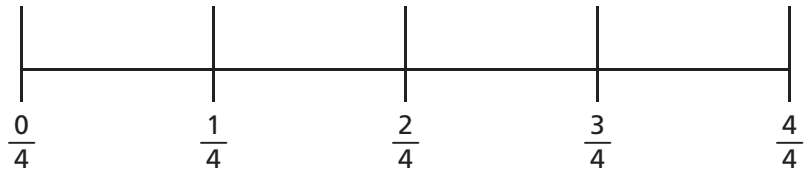
1. Write a chain of equivalent fractions for the shaded parts.



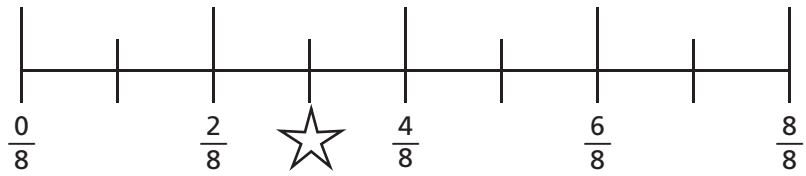
$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{8}{16}$

Use the number lines to complete Exercises 2–7.

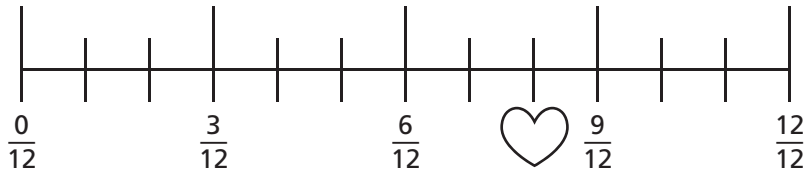
Fourths



Eighths



Twelfths



2. What fraction is marked by the star? $\frac{3}{8}$

3. What fraction is marked by the heart? $\frac{8}{12}$

4. If you have $\frac{3}{4}$ cup of flour, how many eighths do you have?

$\frac{6}{8}$

5. If you have $\frac{3}{12}$ of an orange, how many fourths do you have?

$\frac{1}{4}$

6. Which is greater, $\frac{3}{4}$ or $\frac{10}{12}$? $\frac{10}{12}$

7. Give two equivalent fractions for $\frac{6}{8}$. Possible answers: $\frac{9}{12}$ $\frac{3}{4}$

1-2 Name _____ Date _____

Remembering

Add or subtract.

1. 4,560 + 52,973 = 57,533

2. 581,002 + 26,596 = 607,598

3. 4,300,129 + 3,426 = 4,303,555

4. 398,000 − 213,546 = 184,454

5. Solve the problem below by circling parts of the fraction bar. Write the appropriate equation below the bar.

Molly is driving across the country. She covered $\frac{2}{10}$ of the distance on the first day and $\frac{3}{10}$ on the second day. What fraction of the distance did she cover in the first two days?

$\frac{5}{10}$

$\frac{2}{10}$ + $\frac{3}{10}$ = $\frac{5}{10}$

Complete.

6. $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ = $\frac{4}{8}$, or $\frac{1}{2}$

7. $\frac{7}{10} + \frac{3}{10}$ = $\frac{10}{10}$, or 1

8. $\frac{4}{5} - \frac{1}{5}$ = $\frac{3}{5}$

9. $\frac{8}{10}$ + $\frac{2}{10}$ = 1

10. $\frac{1}{3}$ + $\frac{2}{3}$ = 1

11. $1 - \frac{3}{4}$ = $\frac{1}{4}$

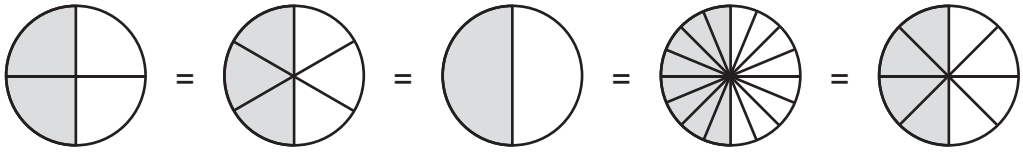
12. Stretch Your Thinking Alyssa said that $\frac{6}{8}$ and $\frac{9}{12}$ are not equivalent because there is no whole number you can multiply both parts of $\frac{6}{8}$ by to get $\frac{9}{12}$. Is she correct? Explain.

She is not correct. Possible explanation: You can multiply both parts of $\frac{3}{4}$ by 2 to get $\frac{6}{8}$ and by 3 to get $\frac{9}{12}$. Because both $\frac{6}{8}$ and $\frac{9}{12}$ are equivalent to $\frac{3}{4}$, they are equivalent to each other.

1-3 **Homework**

Name _____ Date _____

1. Write a chain of equivalent fractions for the shaded parts.



$\frac{2}{4} = \frac{3}{6} = \frac{1}{2} = \frac{8}{16} = \frac{4}{8}$

Write the multiplier or divisor for each pair of equivalent fractions.

2. $\frac{4}{12} = \frac{1}{3}$
Divisor = 4

3. $\frac{2}{9} = \frac{6}{27}$
Multiplier = 3

4. $\frac{6}{60} = \frac{1}{10}$
Divisor = 6

5. $\frac{3}{10} = \frac{15}{50}$
Multiplier = 5

6. $\frac{21}{56} = \frac{3}{8}$
Divisor = 7

7. $\frac{5}{7} = \frac{30}{42}$
Multiplier = 6

8. $\frac{4}{16} = \frac{1}{4}$
Divisor = 4

9. $\frac{5}{9} = \frac{25}{45}$
Multiplier = 5

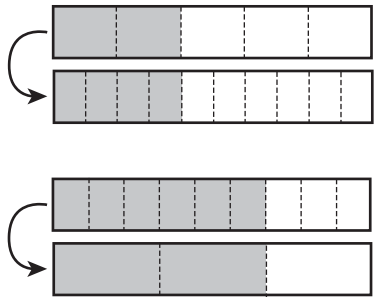
10. $\frac{10}{60} = \frac{1}{6}$
Divisor = 10

11. $\frac{3}{7} = \frac{18}{42}$
Multiplier = 6

12. $\frac{24}{56} = \frac{3}{7}$
Divisor = 8

13. $\frac{5}{6} = \frac{35}{42}$
Multiplier = 7

Complete each exercise about the pairs of fraction bars.



14. What equivalent fractions are shown? $\frac{2}{5}, \frac{4}{10}$

15. Identify the multiplier. 2

16. What equivalent fractions are shown? $\frac{6}{9}, \frac{2}{3}$

17. Identify the divisor. 3

18. Write a chain with at least six equivalent fractions.

$\frac{3}{5} = \frac{6}{10} = \frac{9}{15} = \frac{12}{20} = \frac{15}{25} = \frac{18}{30}$

Answers will vary. This is one possible answer.

1-3 Name _____ Date _____

Remembering

In Exercises 1–3, use this fraction bar.

1. Shade two of the equal parts. What fraction does the shaded portion model?
   $\frac{2}{3}$

2. Split each equal part (each unit fraction) into two equal parts. What fraction does the shaded portion model now?
   $\frac{4}{6}$

3. Fill in the boxes to show how you unsimplified the original fraction.

$$\frac{2 \times \boxed{2}}{3 \times \boxed{2}} = \boxed{\frac{4}{6}}$$

Solve. *Show your work.*

4. A restaurant has 60 plates. One night, 9 groups of 6 people ate dinner at the restaurant at the same time. How many plates were not used by these diners?
   6 plates

5. Clara has a garden that is 7 feet wide and 4 feet long. She has 30 tomato plants to put in the garden. Each plant needs 1 square foot of space. How many leftover plants will Clara have?
   2 plants

6. **Stretch Your Thinking** Carol's bookshelf has 4 shelves with 6 books on each. Her brother Robert has 3 shelves with 7 books on each. They want to combine their books. If they put 9 books on a shelf, how many shelves will they need?
   5 shelves

1-4 Homework

Name _____ Date _____

Compare.

1. $\frac{5}{8} > \frac{5}{9}$
2. $\frac{1}{5} < \frac{1}{4}$
3. $\frac{2}{5} < \frac{3}{5}$
4. $\frac{6}{8} > \frac{2}{3}$
5. $\frac{10}{11} < \frac{11}{12}$
6. $\frac{3}{8} < \frac{5}{12}$
7. $\frac{5}{12} < \frac{4}{7}$
8. $\frac{1}{3} < \frac{4}{9}$
9. $\frac{1}{4} > \frac{2}{9}$
10. $\frac{1}{12} > \frac{1}{15}$
11. $\frac{7}{10} < \frac{11}{15}$
12. $\frac{12}{25} < \frac{51}{100}$

Solve. *Show your work.*

13. During his first season on the school football team, Wade made 5 of the 9 field goals he tried. During his second season, he made 11 of the 15 field goals he tried. In which season did he make the greater fraction of the field goals he tried?

during the second season

14. Mañuela bought $\frac{11}{12}$ yard of polka dot fabric and $\frac{7}{9}$ yard of flowered fabric. Which fabric did she buy more of?

the polka dot fabric

15. Of the 7 pens in Ms. Young's desk, 3 are blue. Of the 9 pens in Mr. Fox's desk, 5 are blue. Which teacher has a greater fraction of pens that are blue?

Mr. Fox

16. Mr. Sommers spent 10 minutes of his 50-minute math period reviewing homework. Mr. Young spent 12 minutes of his 60-minute math period reviewing homework. Which teacher spent a greater fraction of his math period reviewing homework?

Neither; both teachers spent $\frac{1}{5}$ of the period reviewing homework.

1-4 Name _____ Date _____

Remembering

Complete.

1. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$ $\frac{3}{4}$

2. $\frac{8}{9} - \frac{4}{9} =$ $\frac{4}{9}$

3. $\frac{4}{5} + \frac{1}{5} =$ $\frac{5}{5}$, or 1

4. $\frac{3}{8} + \frac{3}{8} =$ $\frac{6}{8}$, or $\frac{3}{4}$

Write the multiplier or divisor for each pair of equivalent fractions.

5. $\frac{5}{6} = \frac{10}{12}$
   Multiplier = 2

6. $\frac{12}{15} = \frac{4}{5}$
   Divisor = 3

7. $\frac{3}{4} = \frac{18}{24}$
   Multiplier = 6

8. $\frac{25}{50} = \frac{5}{10}$
   Divisor = 5

9. $\frac{1}{4} = \frac{7}{28}$
   Multiplier = 7

10. $\frac{11}{22} = \frac{1}{2}$
    Divisor = 11

Complete the chain of equivalent fractions. Answers may vary. Possible answers are given.

11. $\frac{2}{5} = \frac{4}{10} = \frac{6}{15} = \frac{8}{20} = \frac{10}{25} = \frac{12}{30} = \frac{14}{35}$

12. $\frac{5}{9} = \frac{10}{18} = \frac{15}{27} = \frac{20}{36} = \frac{25}{45} = \frac{30}{54} = \frac{35}{63}$

Solve.

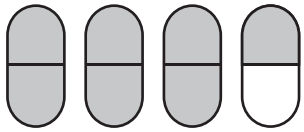
13. **Stretch Your Thinking** Harry ate $\frac{4}{8}$ of a large pizza. Aidan ate $\frac{1}{2}$ of a small pizza. Harry said that since $\frac{4}{8}$ is equivalent to $\frac{1}{2}$, he and Aidan ate the same amount of pizza. Is he correct? Explain.

He is not correct. The size of the whole was different for the two pizzas. Half of a large pizza is more than half of a small pizza because it is half of a larger amount.

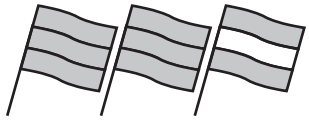
1-5 **Homework**

Name _____ Date _____

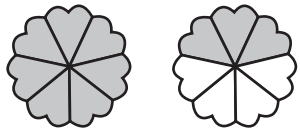
Name the mixed number shown by the shaded parts.



1. $3\frac{1}{2}$



2. $2\frac{2}{3}$



3. $1\frac{3}{7}$

Write the mixed number as a fraction.

4. $2\frac{1}{3} = \frac{7}{3}$

5. $4\frac{2}{5} = \frac{22}{5}$

6. $3\frac{3}{4} = \frac{15}{4}$

7. $1\frac{5}{8} = \frac{13}{8}$

Write the fraction as a mixed number.

8. $\frac{7}{6} = 1\frac{1}{6}$

9. $\frac{8}{3} = 2\frac{2}{3}$

10. $\frac{9}{2} = 4\frac{1}{2}$

11. $\frac{10}{7} = 1\frac{3}{7}$

Complete. Give the answer as a mixed number.

12. $\frac{3}{5} + \frac{4}{5} = 1\frac{2}{5}$

13. $\frac{6}{4} + \frac{3}{4} = 2\frac{1}{4}$

14. $\frac{2}{9} + \frac{8}{9} = 1\frac{1}{9}$

15. $7 + \frac{2}{3} = 7\frac{2}{3}$

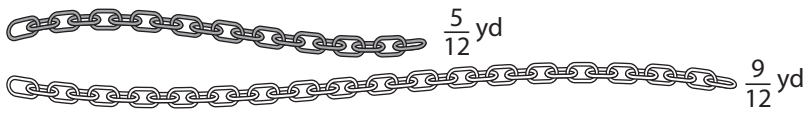
Solve. *Show your work.*

16. Alicia walked $\frac{7}{8}$ mile on Saturday and $\frac{6}{8}$ mile on Sunday. How far did she walk over the weekend? Give the answer as a mixed number.

$1\frac{5}{8}$ miles

17. The dark chain is $\frac{5}{12}$ yard long. The light one is $\frac{9}{12}$ yard long. How long will they be if they are joined? Give the answer as a mixed number.

$1\frac{2}{12}$ yards



Name _____ Date _____

Remembering

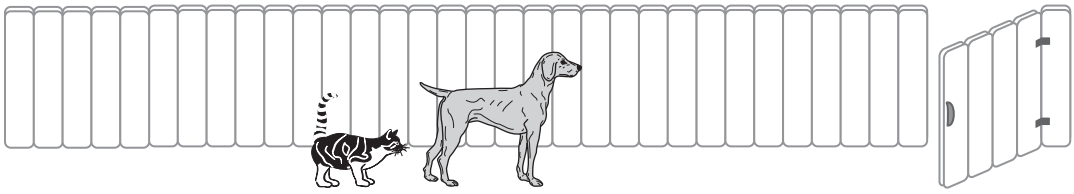
Solve.

1. The dog has gone $\frac{5}{8}$ of the way across the yard. How much farther does it have to go to reach the gate?

   $\frac{3}{8}$ of the way

2. The cat has gone $\frac{7}{16}$ of the way across the yard. How much farther does it have to go to reach the gate?

   $\frac{9}{16}$ of the way



3. I cleaned $\frac{6}{9}$ of my room, and my friend cleaned $\frac{2}{9}$ of my room. How much of my room do we still have to clean?

   $\frac{1}{9}$

4. Mrs. Spencer's class is signing up to play sports. $\frac{8}{26}$ of the students want to play soccer and $\frac{12}{26}$ want to play basketball. The rest of the students want to play baseball. What fraction of the students wants to play baseball?

   $\frac{6}{26}$

Compare.

5. $\frac{2}{6} > \frac{1}{6}$
6. $\frac{4}{9} > \frac{4}{10}$
7. $\frac{7}{12} > \frac{13}{24}$
8. $\frac{3}{5} > \frac{1}{3}$
9. $\frac{4}{6} = \frac{6}{9}$
10. $\frac{4}{5} < \frac{5}{6}$
11. $\frac{7}{12} < \frac{3}{4}$
12. $\frac{3}{5} > \frac{4}{9}$
13. $\frac{7}{9} < \frac{7}{8}$

14. **Stretch Your Thinking** Find two fractions that are between $\frac{3}{5}$ and $\frac{4}{5}$.

    Possible answers: $\frac{7}{10}$, $\frac{11}{15}$

1-6

Homework

Name _____ Date _____

Add or subtract.

1. $\frac{3}{5} + \frac{4}{5}$
   $1\frac{2}{5}$

2. $\frac{6}{4} + \frac{3}{4}$
   $2\frac{1}{4}$

3. $4\frac{2}{9} + 2\frac{7}{9}$
   7

4. $1\frac{7}{8} + 3\frac{3}{8}$
   $5\frac{2}{8}$ or $5\frac{1}{4}$

5. $1\frac{7}{9} - \frac{4}{9}$
   $1\frac{3}{9}$ or $1\frac{1}{3}$

6. $4\frac{6}{7} - 2\frac{5}{7}$
   $2\frac{1}{7}$

7. $6\frac{4}{5} - 3\frac{2}{5}$
   $3\frac{2}{5}$

8. $25\frac{5}{8} - 10\frac{1}{8}$
   $15\frac{4}{8}$ or $15\frac{1}{2}$

9. $4\frac{1}{2} + 5\frac{1}{2}$
   10

10. $3\frac{1}{7} + 2\frac{1}{7}$
    $5\frac{2}{7}$

11. $1\frac{5}{7} + 1\frac{3}{7}$
    $3\frac{1}{7}$

12. $50\frac{1}{3} + 50\frac{1}{3}$
    $100\frac{2}{3}$

13. $2 - \frac{1}{3}$
    $1\frac{2}{3}$

14. $5\frac{3}{8} - 2\frac{7}{8}$
    $2\frac{4}{8}$ or $2\frac{1}{2}$

15. $2\frac{1}{6} - 1\frac{5}{6}$
    $\frac{2}{6}$ or $\frac{1}{3}$

Solve. *Show your work.*

16. I made a clay snake $9\frac{5}{8}$ inches long, but a section $1\frac{7}{8}$ inches long broke off. How long is the snake now?
    $7\frac{6}{8}$ in. or $7\frac{3}{4}$ in.

17. A group of campers hiked for $5\frac{3}{4}$ hours today and $6\frac{3}{4}$ hours yesterday. How many hours did they hike in all?
    $12\frac{2}{4}$ hours or $12\frac{1}{2}$ hours

18. Deacon had $12\frac{1}{3}$ ounces of juice, but he drank $3\frac{2}{3}$ ounces. How much juice is left?
    $8\frac{2}{3}$ oz

1-6 Name _____ Date _____

Remembering

Complete to form equivalent fractions.

1. $\frac{1}{2} = \frac{4}{\boxed{8}}$

2. $\frac{\boxed{12}}{\boxed{15}} = \frac{4}{5}$

3. $\frac{6}{7} = \frac{\boxed{24}}{28}$

Answers to Exercises 4–6 will vary. Possible answers are given.

4. $\frac{4}{\boxed{6}} = \frac{\boxed{6}}{9}$

5. $\frac{25}{100} = \frac{\boxed{1}}{\boxed{4}}$

6. $\frac{\boxed{2}}{8} = \frac{3}{\boxed{12}}$

Compare.

7. $\frac{3}{10} < \frac{3}{8}$

8. $\frac{4}{5} < \frac{5}{6}$

9. $\frac{5}{7} > \frac{2}{3}$

10. $\frac{5}{6} > \frac{19}{24}$

11. $\frac{4}{15} < \frac{3}{10}$

12. $\frac{1}{49} > \frac{1}{50}$

Solve.

Show your work.

13. Rosa got 5 out of 7 answers correct on her science quiz. Her older sister Ana got 4 answers out of 6 correct on her science quiz. Which sister answered a greater fraction of the questions correctly?

Rosa

14. The number 85% is equivalent to the fraction $\frac{85}{100}$. Pablo spelled 21 out of 25 words correctly on his spelling test. Is this more or less than 85% of the words?

less

15. **Stretch Your Thinking** Marla ate $\frac{3}{8}$ of a small pepperoni pizza and $\frac{2}{8}$ of a small cheese pizza. Damien ate $\frac{3}{12}$ of a small veggie pizza and $\frac{5}{12}$ of a small mushroom pizza. Who ate a greater fraction of a whole pizza?

Damien

1-7 Homework

Name _____ Date _____

Add.

1. $\frac{1}{3} + \frac{1}{2}$ $\frac{5}{6}$

2. $\frac{7}{10} + \frac{1}{5}$ $\frac{9}{10}$

3. $\frac{2}{9} + \frac{1}{6}$ $\frac{7}{18}$

4. $\frac{5}{32} + \frac{1}{4}$ $\frac{13}{32}$

5. $\frac{1}{6} + \frac{2}{3}$ $\frac{5}{6}$

6. $\frac{5}{11} + \frac{1}{2}$ $\frac{21}{22}$

7. $\frac{3}{16} + \frac{3}{4}$ $\frac{15}{16}$

8. $\frac{3}{7} + \frac{1}{3}$ $\frac{16}{21}$

9. $\frac{5}{12} + \frac{3}{8}$ $\frac{19}{24}$

Solve. *Show your work.*

10. Of the people who attended the school play, $\frac{5}{12}$ were students and $\frac{1}{8}$ were teachers. What fraction of the total audience were students or teachers?
$\frac{13}{24}$

11. Mara bought $\frac{2}{3}$ yard of yellow ribbon and $\frac{1}{4}$ yard of blue ribbon. How many yards of ribbon did she buy altogether?
$\frac{11}{12}$ yard

12. For breakfast, Oliver drank $\frac{5}{16}$ of a pitcher of juice. His brother Joey drank $\frac{3}{8}$ of the pitcher of juice. What fraction of a pitcher did they drink together?
$\frac{11}{16}$

13. A recipe calls for $\frac{1}{3}$ cup of brown sugar and $\frac{3}{4}$ cup of white sugar. How much sugar is this altogether?
$1\frac{1}{12}$ cups

Name _____ Date _____

Remembering

Solve for *n* or *d*.

1. $\frac{1}{6} = \frac{n}{24}$ 4
2. $\frac{3}{4} = \frac{15}{d}$ 20
3. $\frac{9}{54} = \frac{1}{d}$ 6
4. $\frac{10}{18} = \frac{n}{9}$ 5
5. $\frac{3}{7} = \frac{18}{d}$ 42
6. $\frac{3}{5} = \frac{n}{40}$ 24
7. $\frac{27}{36} = \frac{n}{4}$ 3
8. $\frac{14}{49} = \frac{2}{d}$ 7
9. $\frac{5}{6} = \frac{n}{48}$ 40
10. $\frac{1}{3} = \frac{20}{d}$ 60
11. $\frac{21}{56} = \frac{3}{d}$ 8
12. $\frac{20}{25} = \frac{n}{5}$ 4

Add or subtract.

13. $1\frac{1}{3} + 2\frac{1}{3}$ $3\frac{2}{3}$
14. $3\frac{3}{5} - 1\frac{1}{5}$ $2\frac{2}{5}$
15. $6\frac{3}{8} + 3\frac{5}{8}$ 10
16. $6\frac{3}{8} - 3\frac{5}{8}$ $2\frac{6}{8}$ or $2\frac{3}{4}$
17. $1\frac{5}{6} + 2\frac{5}{6}$ $4\frac{4}{6}$ or $4\frac{2}{3}$
18. $7 - 5\frac{1}{4}$ $1\frac{3}{4}$

Compare.

19. $\frac{3}{4}$ < $\frac{6}{7}$
20. $\frac{7}{15}$ > $\frac{2}{5}$
21. $\frac{1}{8}$ < $\frac{3}{20}$
22. $\frac{6}{100}$ > $\frac{6}{101}$
23. $\frac{19}{20}$ < $\frac{20}{21}$
24. $\frac{4}{5}$ > $\frac{7}{9}$

Solve. *Show your work.*

25. In a hockey game, Seth took 12 shots and scored 3 times. Zak took 10 shots and scored twice. Who scored on a greater fraction of his shots?

    Seth

26. Jia rode her bike $7\frac{7}{8}$ miles in the morning and another $6\frac{5}{8}$ miles in the afternoon. How many miles did she ride altogether?

    $14\frac{4}{8}$ miles or $14\frac{1}{2}$ miles

27. **Stretch Your Thinking** Last season, Jenny made 3 out of every 4 free throws she took. If she took 48 free throws, how many did she make?

    36 free throws

1-8 Homework

Name _____ Date _____

Subtract.

1. $\frac{1}{3} - \frac{1}{7}$ — $\frac{4}{21}$

2. $\frac{4}{5} - \frac{8}{15}$ — $\frac{4}{15}$

3. $\frac{5}{6} - \frac{2}{9}$ — $\frac{11}{18}$

4. $\frac{61}{100} - \frac{7}{25}$ — $\frac{33}{100}$

5. $\frac{4}{7} - \frac{1}{6}$ — $\frac{17}{42}$

6. $\frac{6}{11} - \frac{1}{2}$ — $\frac{1}{22}$

Circle the greater fraction. Then write and solve a subtraction problem to find the difference of the fractions. Common denominators in subtraction problems may vary.

7. $\frac{9}{10}$ (11/12) $\frac{11}{12} - \frac{9}{10} = \frac{55}{60} - \frac{54}{60} = \frac{1}{60}$

8. $\frac{5}{18}$ (1/3) $\frac{1}{3} - \frac{5}{18} = \frac{6}{18} - \frac{5}{18} = \frac{1}{18}$

Solve. Show your work.

9. Marly passes the library on her way to school. The distance from Marly's house to the library is $\frac{3}{8}$ mile. The distance from Marly's house to the school is $\frac{4}{5}$ mile. How far is it from the library to Marly's school?
$\frac{17}{40}$ mile

10. Tim spends about $\frac{1}{3}$ of each weekday sleeping and about $\frac{7}{24}$ of each weekday in school.

   a. What fraction of a weekday does Tim spend either sleeping or in school?
   $\frac{15}{24}$ day or $\frac{5}{8}$ day

   b. Is this more or less than $\frac{1}{2}$ a day? more

   c. How much more or less? $\frac{3}{24}$ day or $\frac{1}{8}$ day

Name _____ Date _____

Remembering

Write each fraction as a mixed number.

1. $\frac{11}{5} =$ $2\frac{1}{5}$
2. $\frac{21}{8} =$ $2\frac{5}{8}$
3. $\frac{57}{6} =$ $9\frac{3}{6}$ or $9\frac{1}{2}$

Write each mixed number as a fraction.

4. $1\frac{5}{6} =$ $\frac{11}{6}$
5. $11\frac{2}{3} =$ $\frac{35}{3}$
6. $6\frac{1}{9} =$ $\frac{55}{9}$

Add or subtract.

7. $\frac{3}{7} + \frac{2}{7}$ $\frac{5}{7}$
8. $\frac{7}{10} - \frac{3}{10}$ $\frac{4}{10}$ or $\frac{2}{5}$
9. $\frac{3}{10} + \frac{2}{5}$ $\frac{7}{10}$
10. $2\frac{1}{6} + 3\frac{5}{6}$ 6
11. $6\frac{11}{12} - 2\frac{5}{12}$ $4\frac{6}{12}$ or $4\frac{1}{2}$
12. $5\frac{1}{3} - 1\frac{2}{3}$ $3\frac{2}{3}$
13. $4\frac{3}{4} + 4\frac{3}{4}$ $9\frac{2}{4}$ or $9\frac{1}{2}$
14. $4 - 3\frac{5}{8}$ $\frac{3}{8}$
15. $\frac{3}{11} + \frac{1}{3}$ $\frac{20}{33}$

Solve. *Show your work.*

16. Ayala and Sam were partners on a science project. Ayala spent $2\frac{3}{4}$ hours working on the project. Sam spent $1\frac{3}{4}$ hours working on the project. How long did they work altogether?

$4\frac{2}{4}$ hours or $4\frac{1}{2}$ hours

17. **Stretch Your Thinking** Marti grouped all her CDs into separate categories. She said, "$\frac{2}{5}$ of my CDs are rock music, $\frac{1}{6}$ are jazz, $\frac{1}{3}$ are hip hop, and $\frac{1}{4}$ are country music." Explain why Marti's statement cannot be correct.

Possible answer: The sum should be 1 to represent the whole collection, but it is greater than 1: $\frac{2}{5} + \frac{1}{6} + \frac{1}{3} + \frac{1}{4} = \frac{24}{60} + \frac{10}{60} + \frac{20}{60} + \frac{15}{60} = 1\frac{9}{60}$ or $1\frac{3}{20}$.

1-9

Homework

Name _____ Date _____

Add or subtract.

1. $7\frac{1}{2} + 6\frac{5}{8} = 14\frac{1}{8}$

2. $2\frac{3}{5} + 5\frac{1}{4} = 7\frac{17}{20}$

3. $5\frac{3}{8} + 2\frac{3}{4} = 8\frac{1}{8}$

4. $3\frac{4}{15} - 1\frac{1}{5} = 2\frac{1}{15}$

5. $9\frac{5}{6} - 4\frac{1}{8} = 5\frac{17}{24}$

6. $1\frac{1}{9} + 3\frac{5}{8} = 4\frac{53}{72}$

7. $8\frac{1}{6} - 2\frac{7}{12} = 5\frac{7}{12}$

8. $6\frac{7}{9} - 4\frac{2}{3} = 2\frac{1}{9}$

9. $3\frac{9}{14} - 1\frac{2}{7} = 2\frac{5}{14}$

Solve. *Show your work.*

10. Last year my elm tree was $8\frac{5}{6}$ feet tall. This year it is $10\frac{1}{12}$ feet tall. How much did it grow in one year?

    $1\frac{1}{4}$ feet

11. Luis rode his bicycle $2\frac{3}{10}$ miles before lunch. He rode $1\frac{1}{4}$ miles after lunch. How far did Luis ride altogether?

    $3\frac{11}{20}$ miles

12. Carrie spent $2\frac{1}{2}$ hours trimming bushes and $1\frac{1}{4}$ hours weeding the garden. She is supposed to work in the yard for 5 hours. How much longer does she need to work?

    $1\frac{1}{4}$ hours

Name _____ Date _____

Remembering

Add or subtract. Try to do these in your head.

1. $3\frac{1}{4} + 2\frac{3}{4} =$ 6
2. $2\frac{3}{4} - \frac{1}{4} =$ $2\frac{2}{4}$ or $2\frac{1}{2}$
3. $3\frac{2}{5} + 4\frac{4}{5} =$ $8\frac{1}{5}$
4. $6\frac{6}{7} - 5\frac{2}{7} =$ $1\frac{4}{7}$
5. $8\frac{2}{3} + 1\frac{2}{3} =$ $10\frac{1}{3}$
6. $5\frac{6}{7} - 1\frac{2}{7} =$ $4\frac{4}{7}$
7. $3\frac{3}{5} + 3\frac{3}{5} =$ $7\frac{1}{5}$
8. $7\frac{7}{8} - 3\frac{3}{8} =$ $4\frac{4}{8}$ or $4\frac{1}{2}$
9. $5\frac{3}{8} + 3\frac{5}{8} =$ 9

Write the fractions in order from least to greatest.

10. $\frac{1}{9}, \frac{1}{3}, \frac{1}{6}, \frac{1}{2}$ $\frac{1}{9}, \frac{1}{6}, \frac{1}{3}, \frac{1}{2}$
11. $\frac{4}{9}, \frac{2}{9}, \frac{8}{9}, \frac{1}{9}$ $\frac{1}{9}, \frac{2}{9}, \frac{4}{9}, \frac{8}{9}$
12. $\frac{2}{3}, \frac{3}{5}, \frac{1}{2}, \frac{3}{4}$ $\frac{1}{2}, \frac{3}{5}, \frac{2}{3}, \frac{3}{4}$
13. $\frac{11}{15}, \frac{3}{5}, \frac{2}{3}, \frac{19}{30}$ $\frac{3}{5}, \frac{19}{30}, \frac{2}{3}, \frac{11}{15}$

List three fractions equivalent to the given fraction. Answers will vary.

14. $\frac{1}{5}$ _____
15. $\frac{15}{18}$ _____
16. $\frac{4}{7}$ _____
17. $\frac{9}{12}$ _____

Solve. *Show your work.*

18. Ted is making a bread recipe that uses $3\frac{1}{4}$ cups of flour and a muffin recipe that uses $2\frac{3}{4}$ cups of flour.

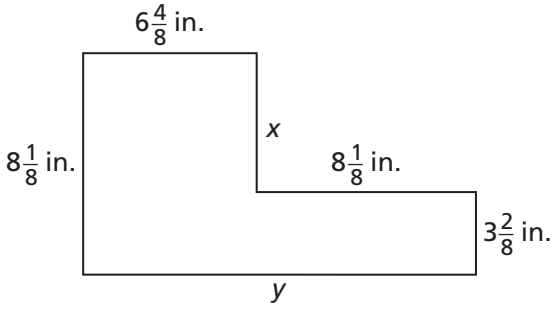
    a. How much more flour is in the bread than in the muffins?
    $\frac{2}{4}$ cup or $\frac{1}{2}$ cup

    b. How much flour does Ted need for both recipes?
    6 cups

19. **Stretch Your Thinking** Find the values of x and y in the drawing at the right.

    $x =$ $4\frac{7}{8}$ inches

    $y =$ $14\frac{5}{8}$ inches



Name _____ Date _____

Add or subtract.

1. $3 - 1\frac{2}{5} = 1\frac{3}{5}$

2. $2\frac{7}{10} + 2\frac{4}{5} = 5\frac{1}{2}$

3. $7\frac{5}{9} - 3\frac{2}{15} = 4\frac{19}{45}$

4. $4\frac{5}{6} + \frac{6}{7} = 5\frac{29}{42}$

5. $5\frac{1}{8} - 4\frac{1}{5} = \frac{37}{40}$

6. $4\frac{79}{100} + 5\frac{9}{10} = 10\frac{69}{100}$

7. $\frac{13}{16} + \frac{2}{3} = 1\frac{23}{48}$

8. $8\frac{1}{4} - 3\frac{9}{20} = 4\frac{4}{5}$

9. $7\frac{8}{9} + 9\frac{7}{8} = 17\frac{55}{72}$

Solve.

10. The Taylors have four dogs. Molly eats $4\frac{1}{2}$ cups of food each day, Roscoe eats $3\frac{2}{3}$ cups, Milo eats $1\frac{3}{4}$ cups, and Fifi eats $\frac{3}{4}$ cup. How much do the Taylors' dogs eat each day altogether?

$10\frac{2}{3}$ cups

11. Refer to Problem 10. How much more food does Molly eat each day than Roscoe?

$\frac{5}{6}$ cup

12. The vet told the Taylors (from Problem 10) to decrease the amount Molly eats by $\frac{3}{4}$ cup. After Molly's food is adjusted, will she eat more or less than Roscoe each day? How much more or less?

more; $\frac{1}{12}$ cup

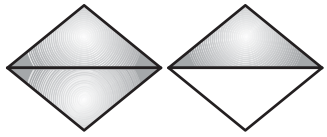
Name _____ Date _____

Remembering

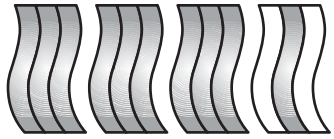
What mixed number is shown by each shaded part?

1. 

$2\frac{3}{4}$

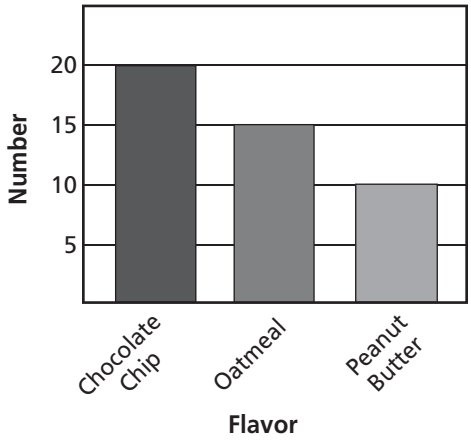
2. 

$1\frac{1}{2}$

3. 

$3\frac{1}{3}$

Answer the questions about the bar graph. Give your answers as simple fractions.



4. How many cookies are there altogether? 45

5. What fraction of the cookies are chocolate chip? $\frac{4}{9}$

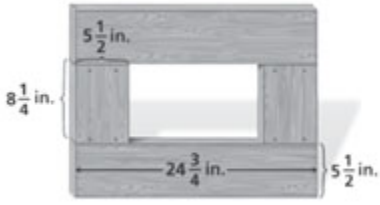
6. What fraction of the cookies are oatmeal? $\frac{1}{3}$

7. What fraction of the cookies are peanut butter? $\frac{2}{9}$

8. Melanie baked 25 cookies. Did she bake more or less than half of the cookies? more

   How do you know?
   Answers will vary. Half of 45 is $22\frac{1}{2}$; 25 is greater than $22\frac{1}{2}$

9. **Stretch Your Thinking** Colby nailed together four wood boards as shown at the right. All four boards are $5\frac{1}{2}$ inches wide.



   a. Find the perimeter of the outside rectangle.
   88 inches

   b. Find the perimeter of the inside rectangle.
   44 inches

1-11 **Homework**

Name _____ Date _____

Use benchmarks of 0, $\frac{1}{2}$, and 1 to estimate the sum or difference. Then find the actual sum or difference.

1. $\frac{2}{5} + \frac{4}{7}$
Estimate: 1
Sum: $\frac{34}{35}$

2. $\frac{13}{20} - \frac{3}{10}$
Estimate: 0
Difference: $\frac{7}{20}$

3. $\frac{13}{18} + \frac{1}{2}$
Estimate: 1
Sum: $1\frac{2}{9}$

Estimate the sum or difference by rounding each mixed number to the nearest whole number. Then find the actual sum or difference.

4. $3\frac{5}{8} - 1\frac{1}{2}$
Estimate: 2
Difference: $2\frac{1}{8}$

5. $6\frac{4}{9} + 5\frac{7}{12}$
Estimate: 12
Sum: $12\frac{1}{36}$

6. $7\frac{11}{18} - 4\frac{1}{15}$
Estimate: 4
Difference: $3\frac{49}{90}$

Tell whether the answer is reasonable or unreasonable. Explain how you decided. Explanations will vary. Possible explanations are given.

7. $2\frac{1}{5} + 5\frac{1}{3} = 7\frac{8}{15}$
Reasonable; Using rounding gives the estimate $2 + 5 = 7$.

8. $\frac{7}{8} - \frac{2}{11} = \frac{9}{19}$
Unreasonable; Using benchmarks gives the estimate $1 - 0 = 1$.

9. $\frac{3}{8} + \frac{4}{5} = \frac{7}{40}$
Unreasonable; Using benchmarks gives the estimate $\frac{1}{2} + 1 = 1\frac{1}{2}$.

10. $4\frac{1}{3} - 1\frac{5}{6} = 2\frac{1}{2}$
Reasonable; Using rounding gives the estimate $4 - 2 = 2$.

Solve.

11. Estimate the difference $8\frac{7}{12} - 4\frac{7}{8} - \frac{4}{10}$. Explain how you found the answer.
Sample answer: Use the 0, $\frac{1}{2}$, 1 benchmarks. $8\frac{7}{12}$ is closer to $8\frac{1}{2}$, $4\frac{7}{8}$ is closer to 5, and $\frac{4}{10}$ is closer to $\frac{1}{2}$; $8\frac{1}{2} - 5 - \frac{1}{2} = 3$

1-11 Name _____ Date _____

Remembering

Add or subtract. Give your answer in simplest form.

1. $4 - 3\frac{7}{8} = \frac{1}{8}$

2. $5\frac{1}{2} + 6\frac{3}{4} = 12\frac{1}{4}$

3. $3\frac{1}{10} - 1\frac{5}{6} = 1\frac{4}{15}$

4. $\frac{6}{7} + \frac{3}{5} = 1\frac{16}{35}$

5. $10\frac{3}{8} - 1\frac{7}{8} = 8\frac{1}{2}$

6. $2\frac{13}{25} + 3\frac{99}{100} = 6\frac{51}{100}$

Compare.

7. $\frac{5}{7} > \frac{5}{9}$

8. $\frac{99}{100} < \frac{100}{101}$

9. $\frac{7}{15} > \frac{9}{20}$

10. $\frac{6}{11} > \frac{4}{9}$

11. $\frac{1}{21} > \frac{1}{22}$

12. $\frac{5}{16} > \frac{1}{4}$

Solve. *Show your work.*

13. On the first math test, Octavia answered 24 out of 30 questions correctly. On the second math test, she answered 19 out of 25 questions correctly. On which test did she answer the greater fraction of the questions correctly?

the first test

14. **Stretch Your Thinking** Isidro is riding his bike 22 miles to the art museum. He rode $7\frac{1}{2}$ miles and then took a break. Since his break, he has ridden $5\frac{7}{10}$ mile. How much farther does he have to ride to get to the museum?

$8\frac{4}{5}$ miles

Name _____ Date _____

Solve. Explain why your answer is reasonable. Show your work.

Explanations may vary.

1. Zoe had a board $5\frac{1}{4}$ feet long. She cut off a piece. Now the board is $3\frac{5}{6}$ feet long. How long was the piece she cut off?

Answer: $1\frac{5}{12}$ feet

Why is the answer reasonable?

$5\frac{1}{4}$ rounds to 5. $3\frac{5}{6}$ rounds to 4. The answer should be about $5 - 4$, or 1.

2. A rectangle has a length of $10\frac{3}{16}$ inches and a width of $6\frac{7}{8}$ inches. What is the perimeter of the rectangle?

Answer: $34\frac{1}{8}$ inches

Why is the answer reasonable?

$10\frac{3}{16}$ rounds to 10. $6\frac{7}{8}$ rounds to 7. The answer should be about $10 + 10 + 7 + 7 = 34$.

3. Max is making trail mix. He combines $\frac{2}{5}$ pound of dried fruit and $\frac{1}{3}$ pound of mixed nuts. He adds sunflower seeds to make a total of 1 pound. What is the weight of the seeds?

Answer: $\frac{4}{15}$ pounds

Why is the answer reasonable?

$\frac{2}{5}$ and $\frac{1}{3}$ are each a little less than $\frac{1}{2}$, so their sum is a little less than 1. It would take a small fraction, close to 0, to make a total of 1.

4. At the start of party, a bowl contains 16 pints of punch. Guests drink $10\frac{1}{4}$ pints. Then the host adds another $7\frac{1}{2}$ pints to the bowl. How much punch is in the bowl now?

Answer: $13\frac{1}{4}$ pints

Why is the answer reasonable?

$10\frac{1}{4}$ rounds to 10, so about 6 pints are left and then $7\frac{1}{2}$ are added, so the answer should be about $13\frac{1}{2}$.

1-12 Name _____ Date _____

Remembering

Tell whether the answer is reasonable or unreasonable. Explain how you decided. Explanations may vary.

1. $\frac{8}{9} + \frac{1}{10} = \frac{39}{90}$
Unreasonable; $\frac{8}{9}$ is very close to 1, but $\frac{39}{90}$ isn't even $\frac{1}{2}$.

2. $5\frac{1}{6} - 4\frac{2}{7} = 2\frac{37}{42}$
Unreasonable; Rounding gives the estimate $5 - 4 = 1$.

3. $\frac{11}{12} - \frac{7}{8} = \frac{1}{24}$
Reasonable; Using benchmarks gives the estimate $1 - 1 = 0$.

4. $5\frac{5}{6} + 1\frac{3}{4} = 5\frac{1}{12}$
Unreasonable; Using rounding gives the estimate $6 + 2 = 8$.

Add or subtract.

5. $\frac{7}{8} + \frac{5}{8} =$ $1\frac{4}{8}$ or $1\frac{1}{2}$

6. $\frac{4}{7} + \frac{2}{3} =$ $1\frac{5}{21}$

7. $\frac{7}{15} - \frac{3}{10} =$ $\frac{5}{30}$ or $\frac{1}{6}$

8. $\frac{3}{4} - \frac{5}{12} =$ $\frac{4}{12}$ or $\frac{1}{3}$

9. $5\frac{4}{5} - 2\frac{1}{3} =$ $3\frac{7}{15}$

10. $7\frac{5}{6} + 2\frac{11}{12} =$ $10\frac{9}{12}$ or $10\frac{3}{4}$

Compare.

11. $\frac{5}{8} > \frac{5}{9}$

12. $1\frac{7}{12} < 1\frac{2}{3}$

13. $\frac{5}{9} > \frac{3}{7}$

14. $\frac{1}{89} > \frac{1}{90}$

15. $\frac{5}{18} > \frac{2}{9}$

16. $\frac{65}{66} > \frac{55}{56}$

Solve.

17. **Stretch Your Thinking** Find two mixed numbers such that when you estimate their sum by rounding to the nearest whole number you get a *different* estimate than when you round to the nearest half. Demonstrate that your numbers satisfy this condition.
Possible answer: $2\frac{5}{8}$ and $3\frac{5}{8}$. When you round to the nearest whole number, the estimated sum is $3 + 4 = 7$. When you round to the nearest half, the sum is $2\frac{1}{2} + 3\frac{1}{2} = 6$.

1-13

Homework

Name Date

In the space below, design and sketch a bird hotel. Assume your design will be made from wood, and includes these characteristics.

- Walls not exposed to weathering are $\frac{1}{4}$-inch thick.
- Walls exposed to weathering are $\frac{1}{2}$-inch thick.
- The rooms are identical.

State the number of birds your design will accommodate, and the dimensions of one room. Then use the dimensions to compute the overall length, width, and height of your hotel.

1-13 Name _____ Date _____

Remembering

Add or subtract. Give your answer in simplest form.

1. $7\frac{1}{4} - 4\frac{5}{6} = 2\frac{5}{12}$

2. $1\frac{9}{10} + 1\frac{9}{10} = 3\frac{4}{5}$

3. $4 - 1\frac{6}{7} = 2\frac{1}{7}$

4. $\frac{7}{10} + 1\frac{11}{12} = 2\frac{37}{60}$

5. $4\frac{4}{5} - 1\frac{7}{8} = 2\frac{37}{40}$

6. $3\frac{5}{12} + 1\frac{2}{3} = 5\frac{1}{12}$

Compare.

7. $\frac{1}{57} < \frac{1}{47}$

8. $\frac{5}{7} < \frac{4}{5}$

9. $\frac{14}{15} < \frac{15}{16}$

10. $\frac{5}{6} > \frac{2}{3}$

11. $15\frac{3}{8} < 15\frac{7}{10}$

12. $14\frac{1}{10} > 13\frac{9}{10}$

Solve. *Show your work.*

13. Blake watched $\frac{1}{6}$ of a movie on Friday, $\frac{3}{5}$ of the movie on Saturday, and the rest on Sunday. What fraction of the movie did he watch on Sunday?

$\frac{7}{30}$

14. **Stretch Your Thinking** Marshall surveyed his classmates and found that $\frac{5}{7}$ have a sister, $\frac{1}{2}$ have a brother, and $\frac{3}{14}$ don't have any siblings.

   a. What is the sum of the three fractions?

   $1\frac{3}{7}$

   b. Why does it make sense for the sum to be greater than 1 whole?

   Some students have a sister and a brother. Because the three parts overlap, the total is more than 1 whole.

2-1 Homework

Name _____ Date _____

The following shows how place value and money are related.

ones (dollars)	.	tenths (dimes)	hundredths (pennies)	thousandths (tenths of a penny)

Write each fraction as a decimal and then say it.

1. $\frac{349}{1,000}$ 0.349
2. $\frac{6}{10}$ 0.6
3. $\frac{58}{100}$ 0.58
4. $\frac{27}{1,000}$ 0.027
5. $\frac{2}{10}$ 0.2
6. $\frac{9}{100}$ 0.09
7. $\frac{6}{1,000}$ 0.006
8. $\frac{71}{100}$ 0.71
9. $\frac{90}{100}$ 0.90 or 0.9
10. $\frac{843}{1,000}$ 0.843
11. $\frac{5}{10}$ 0.5
12. $\frac{4}{100}$ 0.04
13. $\frac{1}{1,000}$ 0.001
14. $\frac{45}{100}$ 0.45
15. $\frac{896}{1,000}$ 0.896
16. $\frac{58}{1,000}$ 0.058

Solve.

17. A large building has 1,000 windows, and 5 of the windows need to be replaced. What decimal represents the number of windows that need to be replaced?

    0.005

18. At a reception, 23 of 100 pieces of wedding cake have been eaten. What decimal number represents the number of pieces of cake that have been eaten?

    0.23

19. Jody made 10 party invitations. Yesterday she mailed 4 of them. What decimal represents the number of invitations that have been mailed?

    0.4

20. There are 1,000 vehicles in a stadium parking lot; 422 of the vehicles are trucks. What decimal represents the number of vehicles that are trucks?

    0.422

21. Mr. Chan handed out eight tenths of his flyers. Write a fraction and a decimal that represents the amount of the flyers that he handed out.

    $\frac{8}{10}$; 0.8

22. Jason has an album that holds 100 trading cards. He has 52 trading cards in the album. Write a fraction and a decimal that represent the amount of the album that is filled.

    $\frac{52}{100}$; 0.52

Name _____ Date _____

Remembering

Add.

1. $\frac{1}{3} + \frac{1}{7}$ — $\frac{10}{21}$

2. $\frac{1}{5} + \frac{8}{15}$ — $\frac{11}{15}$

3. $\frac{3}{8} + \frac{1}{4}$ — $\frac{5}{8}$

Subtract.

4. $\frac{4}{5} - \frac{1}{8}$ — $\frac{27}{40}$

5. $\frac{5}{6} - \frac{5}{9}$ — $\frac{5}{18}$

6. $\frac{3}{5} - \frac{1}{12}$ — $\frac{31}{60}$

Add or Subtract.

7. $5 - 3\frac{5}{8}$ — $1\frac{3}{8}$

8. $8\frac{1}{5} + 5\frac{4}{7}$ — $13\frac{27}{35}$

9. $11\frac{2}{5} - 6\frac{3}{20}$ — $5\frac{1}{4}$

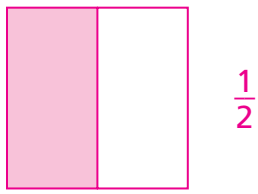
Solve. Show your work.

10. Kennedy served $15\frac{3}{4}$ hours of volunteer service last month. She served $21\frac{5}{6}$ hours of volunteer service this month. How many more hours did she serve this month?

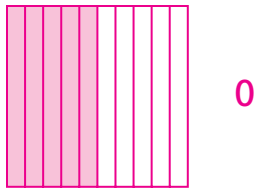
$6\frac{1}{12}$ hours

11. **Stretch Your Thinking** Draw a diagram that shows 0.5 and $\frac{1}{2}$ are equivalent.

Possible drawings shown.



$\frac{1}{2}$



0.5

2-2 **Homework**

Name _____ Date _____

Write a decimal number for each word name.

1. nine thousand, six hundred five and nine tenths

9,605.9

2. two hundred ten thousand, fifty and nineteen hundredths

210,050.19

3. three tenths

0.3

4. seven thousandths

0.007

5. eight hundredths

0.08

Write each amount as a decimal number.

6. $\frac{602}{1,000}$ 0.602

7. $\frac{21}{100}$ 0.21

8. $4\frac{9}{10}$ 4.9

9. $14\frac{27}{100}$ 14.27

10. $35\frac{712}{1,000}$ 35.712

11. $9\frac{5}{100}$ 9.05

12. $24\frac{13}{1,000}$ 24.013

13. $3\frac{68}{100}$ 3.68

14. $2\frac{1}{1,000}$ 2.001

15. $63\frac{7}{10}$ 63.7

16. $\frac{84}{1,000}$ 0.084

17. $29\frac{4}{1,000}$ 29.004

18. $8\frac{17}{1,000}$ 8.017

19. $\frac{6}{100}$ 0.06

20. $5\frac{106}{1,000}$ 5.106

21. $37\frac{3}{100}$ 37.03

Circle the value that is not equivalent to the other values.

22. 2.6 2.60 (2.06) 2.600

23. 4.07 4.070 (4.70) 4.0700

24. 65.800 65.8 (65.08) 65.80

25. (37.6) 37.060 37.0600 37.06

26. Write three decimals that are equivalent.

Answers will vary.

27. Write the decimals in Exercise 26 as fractions.

Answers will vary.

2-2 Name _____ Date _____

Remembering

Add or Subtract.

1. $8\frac{1}{6} - 3\frac{3}{8} = 4\frac{19}{24}$

2. $6\frac{3}{4} + 2\frac{4}{5} = 9\frac{11}{20}$

3. $9\frac{2}{3} + 5\frac{7}{10} = 15\frac{11}{30}$

Solve. *Show your work.*

4. Tanner earns 5 credits while playing on a math review website. He uses $2\frac{4}{15}$ credits while reviewing fractions. How many credits does he have left?

$2\frac{11}{15}$ credits

Estimate the sum or difference by rounding each mixed number to the nearest whole number. Then find the actual sum or difference.

5. $15\frac{5}{6} - 2\frac{1}{5}$

Estimate: 14

Difference: $13\frac{19}{30}$

6. $8\frac{3}{5} + 3\frac{1}{2}$

Estimate: 12

Sum: $12\frac{1}{10}$

Write each fraction as a decimal and then say it.

7. $\frac{44}{100}$ 0.44

8. $\frac{13}{1{,}000}$ 0.013

9. $\frac{3}{10}$ 0.3

10. $\frac{541}{1{,}000}$ 0.541

11. **Stretch Your Thinking** Draw two number lines that show 0.20 and $\frac{1}{5}$ are equivalent. Possible drawings shown.

2-3 **Homework**

Name _____ Date _____

Write each amount as a decimal number.

1. 9 tenths 0.9

2. 52 thousandths 0.052

3. 8 hundredths 0.08

4. 3 cents $0.03

5. $\frac{65}{100}$ 0.65

6. $\frac{548}{1{,}000}$ 0.548

7. $\frac{12}{1{,}000}$ 0.012

8. $\frac{7}{100}$ 0.07

9. 4 thousandths 0.004

Circle the value that is *not* equivalent to the other values.

10. 0.47	0.470	(0.407)	0.4700	**11.** 0.5	0.50	$\frac{5}{10}$	(0.05)
12. (0.801)	0.810	0.81	0.8100	**13.** 0.700	0.70	(0.07)	0.7
14. 0.39	0.390	$\frac{39}{100}$	($\frac{39}{1{,}000}$)	**15.** 0.04	(0.40)	0.040	0.0400

Compare. Write > (greater than) or < (less than).

16. 0.36 (<) 0.8

17. 0.405 (<) 0.62

18. 0.91 (<) 0.95

19. 0.45 (>) 0.4

20. 0.836 (>) 0.83

21. 0.299 (<) 0.3

22. 0.621 (>) 0.612

23. 0.7 (>) 0.07

24. 0.504 (<) 0.54

A store had the same amount of five fabrics. The chart shows the how much of each fabric is left. Use the data to answer each question.

Red fabric	0.510 yd
Blue fabric	0.492 yd
Yellow fabric	0.6 yd
White fabric	0.51 yd
Black fabric	0.48 yd

25. The store sold the most of which fabric? Explain.
Black; The least amount remains.

26. The store sold the least of which fabric? Explain.
Yellow; The greatest amount remains.

27. The same amount of which fabrics is left? Explain.
Red and white; The decimals are equivalent.

2-3 Name _____ Date _____

Remembering

Estimate the sum or difference by rounding each mixed number to the nearest whole number. Then find the actual sum or difference.

1. $3\frac{7}{8} + 4\frac{2}{3}$

Estimate: 9

Sum: $8\frac{13}{24}$

2. $7\frac{5}{8} - 1\frac{1}{2}$

Estimate: 6

Difference: $6\frac{1}{8}$

Solve. Explain how you know your answer is reasonable. Explanations may vary.

Show your work.

3. Eli practices for a piano recital $3\frac{3}{4}$ hours in one week. In the same week, he practices basketball $1\frac{2}{3}$ hours. How much longer does he practice for his piano recital?

Answer: $2\frac{1}{12}$ hours

Why is the answer reasonable?

$3\frac{3}{4}$ rounds to 4. $1\frac{2}{3}$ rounds to 2. The answer should be about 4 − 2, or 2.

Write a decimal number for each word name.

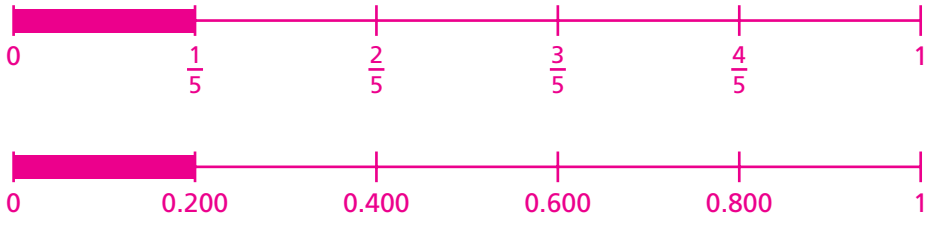
4. six hundred two and six tenths

602.6

5. five thousandths

0.005

6. Stretch Your Thinking Draw two number lines that show 0.200 and $\frac{1}{5}$ are equivalent. Possible drawings shown.



2-4 **Homework**

Name _____ Date _____

The chart at the right shows the time each member of a relay team ran during a race. Use the data to answer each question.

Jack	47.51 sec
Dusty	47.49 sec
Brandon	47.6 sec
Raj	47.57 sec

1. How much longer did Jack run than Dusty?
0.02 sec

2. How much time did it take Brandon and Raj to complete their two legs of the race combined?
95.17 sec

3. Which two runners had the greatest difference in their running times? What is the difference?
Brandon and Dusty; 0.11 sec

Copy each exercise. Then add or subtract.

4. $0.9 + 0.06 =$ 0.96

5. $0.47 + 0.25 =$ 0.72

6. $0.56 + 0.91 =$ 1.47

7. $1.4 - 0.9 =$ 0.5

8. $5 - 1.5 =$ 3.5

9. $3.7 - 2.49 =$ 1.21

10. $0.08 + 0.6 =$ 0.68

11. $0.48 + 0.39 =$ 0.87

12. $19 + 1.04 =$ 20.04

13. $3 - 0.05 =$ 2.95

14. $4.09 - 0.2 =$ 3.89

15. $6.07 - 4 =$ 2.07

2-4 Name _____ Date _____

Remembering

Use benchmarks of 0, $\frac{1}{2}$, and 1 to estimate the sum or difference. Then find the actual sum or difference.

1. $\frac{7}{12} + \frac{5}{6}$

Estimate: $1\frac{1}{2}$

Sum: $1\frac{5}{12}$

2. $\frac{4}{9} - \frac{7}{18}$

Estimate: 0

Difference: $\frac{1}{18}$

Solve. Explain how you know your answer is reasonable. Explanations may vary.

Show your work.

3. Jordan is making a beaded necklace. Two thirds of the beads she uses are red and $\frac{4}{21}$ of the beads are blue. She wants the rest to be white. What fraction of the beads should be white?

Answer: $\frac{1}{7}$

Why is the answer reasonable?

$\frac{2}{3}$ is a little more than $\frac{1}{2}$ and $\frac{4}{21}$ is between 0 and $\frac{1}{2}$, so the estimated sum is a little less than 1. It would take a small fraction, close to 0, to make a total of 1.

Compare. Write > (greater than) or < (less than).

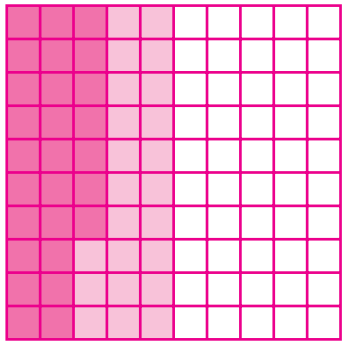
4. 0.2 (>) 0.19

5. 0.564 (<) 0.602

6. 0.08 (<) 0.8

7. Stretch Your Thinking Draw a diagram that shows $0.27 + 0.23 = \frac{1}{2}$.

Possible drawing shown.



2-5 Homework

Name _____ Date _____

Use the number 724,062.58 for each exercise.

1. Increase the number by 0.07. 724,062.65
2. Decrease the number by 100,000. 624,062.58
3. Add 8 in the hundreds place. 724,862.58
4. Subtract 2 from the hundredths place. 724,062.56

Copy each exercise. Then add or subtract.

5. \$37 + 45¢ = \$37.45
6. \$82.06 + 25¢ = \$82.31
7. 59¢ + \$4.23 = \$4.82
8. 9 m + 0.05 m = 9.05 m
9. 92.24 + 3.6 = 95.84
10. 5 m + 0.08 m = 5.08 m
11. 231 + 0.26 = 231.26
12. 46.08 + 0.97 = 47.05
13. 6.4 m + 0.07 m = 6.47 m

Solve. *Show your work.*

14. Lina is making curtains and a decorative pillow for her bedroom. She needs 0.75 meter of cloth for the pillow and 4.67 meters for the curtains. How much cloth does she need in all?
5.42 meters

15. Olivia is buying a jacket that costs \$85.99. The sales tax that will be added to the cost of the jacket is \$5.16. What is the total cost of the jacket including sales tax?
\$91.15

2-5 Name _____ Date _____

Remembering

Compare. Write > (greater than) or < (less than).

1. $\frac{3}{7}$ (>) $\frac{3}{8}$
2. $\frac{1}{8}$ (<) $\frac{1}{6}$
3. $\frac{9}{11}$ (>) $\frac{7}{11}$
4. $\frac{4}{8}$ (<) $\frac{5}{6}$
5. $\frac{5}{6}$ (>) $\frac{3}{4}$
6. $\frac{7}{12}$ (<) $\frac{6}{7}$

Compare. Write > (greater than) or < (less than).

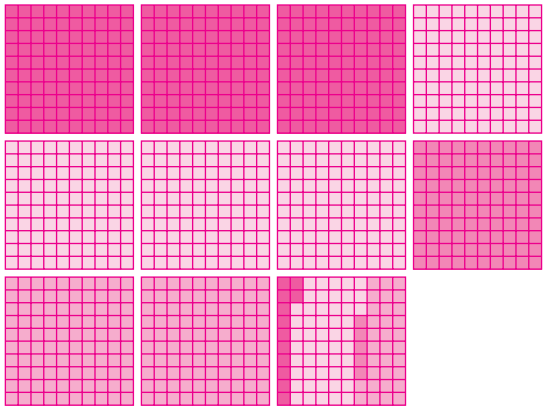
7. 0.17 (<) 0.28
8. 0.275 (>) 0.109
9. 0.29 (<) 0.3
10. 0.61 (>) 0.58
11. 0.81 (>) 0.79
12. 0.05 (<) 0.5

Add or subtract.

13. 0.8 + 0.07 = 0.87
14. 0.22 + 0.49 = 0.71
15. 2.6 − 0.7 = 1.9
16. 5.6 − 4.87 = 0.73
17. 7 − 3.8 = 3.2
18. 0.96 + 0.17 = 1.13

19. **Stretch Your Thinking** Write 4 different mixed decimals that equal 11 wholes. Draw a picture that shows you are correct.

Possible answer: 3.12 + 4.51 + 1.05 + 2.32 = 11



2-6 Homework

Name _____ Date _____

Copy each exercise. Then subtract.

1. 6,000 − 348 = 5,652

2. 7,364 − 937 = 6,427

3. 50,821 − 3,617 = 47,204

4. 720.95 − 286.4 = 434.55

5. 18,652 − 4.31 = 18,647.69

6. 350.6 − 176.54 = 174.06

Solve.

Show your work.

7. Ahmad had a piece of rope that was 7.14 meters long. He cut off 0.09 meter to practice making knots. What was the length of the rope after the cut?

7.05 m

8. Natasha has a large collection of books. The thickest book measures 4.9 centimeters. The thinnest book measures 1.8 centimeters. What is the difference in thicknesses of those two books?

3.1 cm

9. Yoshi saved $1,238.46 for a vacation in Mexico. While in Mexico, she spent $975. What amount of money did Yoshi not spend?

$263.46

10. Tarantulas are one of the largest spiders on Earth. A tarantula can grow to be about 6.8 centimeters long. A spitting spider can grow to be about 0.9 centimeters long. About how much longer are the largest tarantulas than the largest spitting spiders?

exact difference: 5.9 cm; estimate: 6 cm

Name _____ Date _____

Remembering

Write the mixed number as a fraction.

1. $1\frac{3}{5} = \frac{8}{5}$
2. $3\frac{1}{8} = \frac{25}{8}$
3. $2\frac{2}{3} = \frac{8}{3}$
4. $4\frac{4}{7} = \frac{32}{7}$
5. $1\frac{1}{3} = \frac{4}{3}$
6. $3\frac{5}{6} = \frac{23}{6}$

Add or subtract.

7. $6 - 4.1 = 1.9$
8. $0.32 + 0.92 = 1.24$
9. $4.5 - 3.77 = 0.73$

10. $44¢ + \$4.87 = \$5.31$
11. $32¢ + 66¢ = 98¢$
12. $0.43 \text{ m} + 0.77 \text{ m} = 1.2 \text{ m}$

Solve.

Show your work.

13. When Erin got her puppy, Cuddles, he weighed 788.52 grams. He now weighs 2,313.6 grams more than he did when Erin first brought him home. How much does Cuddles weigh now?

3,102.12 grams

14. **Stretch Your Thinking** Write a subtraction equation with a difference of 54.57. Then draw a number line to show between which two whole numbers the difference lies.

Possible answer: $87.66 - 33.09 = 54.57$

2-7 Homework Name _____ Date _____

Use what you know about the Commutative Property to solve for *n*.

1. $26{,}184 + 1{,}546 = 1{,}546 + n$

$n =$ 26,184

2. $17.39 + 12.58 = 12.58 + n$

$n =$ 17.39

Regroup the numbers using the Associative Property. Then add.

3. $(\frac{7}{10} + \frac{3}{4}) + \frac{1}{4} =$

$\frac{7}{10} + (\frac{3}{4} + \frac{1}{4}) = \frac{7}{10} + 1 = 1\frac{7}{10}$

4. $1.02 + (0.98 + 4.87) =$

$(1.02 + 0.98) + 4.87 = 2 + 4.87 = 6.87$

5. $2\frac{5}{8} + (\frac{3}{8} + \frac{2}{3}) =$

$(2\frac{5}{8} + \frac{3}{8}) + \frac{2}{3} = 3 + \frac{2}{3} = 3\frac{2}{3}$

Use the Distributive Property to rewrite the problem so it has only two factors. Then solve.

6. $(25 \times 9) + (75 \times 9) =$

$(25 + 75) \times 9 = 100 \times 9 = 900$

Group the numbers to make the addition easier. Then add.

7.
20,000
70,000
30,000
68,000
+ 80,000
268,000

8.
10.75
10.4
10.25
10.57
+ 10.6
52.57

9.
1.600
1.200
1.200
+ 1.479
5.479

10.
$1\frac{7}{11}$
$5\frac{5}{6}$
$\frac{3}{11}$
$2\frac{1}{6}$
$+ \frac{1}{11}$
10

11. On Monday, Mr. Borden ran 4.6 miles in the morning and 0.78 miles that afternoon. On Tuesday, he ran 3.4 miles. How much did he run on Monday and Tuesday all together. Write an equation and solve.

$(4.6 + 0.78) + 3.4 = (4.6 + 3.4) + 0.78 = 8.78$

2-7 Name _____ Date _____

Remembering

Solve. *Show your work.*

1. Trent is making a week's worth of after-school snacks for himself and his sister. He uses $1\frac{1}{5}$ cups of mixed nuts and $2\frac{3}{4}$ cups of granola. How many cups did he use in all?

$3\frac{19}{20}$ cups

2. Shannon walked $4\frac{7}{8}$ miles and ran $3\frac{1}{2}$ miles during the week. How much further did she walk than run?

$1\frac{3}{8}$ miles

Add.

3. \$54.25 + 55¢ = \$54.80

4. 68¢ + 21¢ = 89¢

5. 92¢ + \$2.39 = \$3.31

6.
0.06 m
+ 0.9 m
0.96 m

7.
0.44 m
+ 0.15 m
0.59 m

8.
5.6 m
+ 0.7 m
6.3 m

Subtract.

9.
70,763
− 2,176
68,587

10.
6,982
− 455
6,527

11.
5,000
− 452
4,548

12.
46,872
− 8.28
46,863.72

13.
561.5
− 478.49
83.01

14.
676.54
− 196.9
479.64

15. Stretch Your Thinking Use decimals and fractions in the same equation showing the Commutative Property. Repeat for the Associative Property.

Possible answer: Commutative Property: $4.68 + 2\frac{6}{7} = 2\frac{6}{7} + 4.68$;

Associative Property: $(\frac{5}{6} + 1.03) + 7.25 = \frac{5}{6} + (1.03 + 7.25)$

2-8 **Homework**

Name _____ Date _____

Round to the nearest whole number.

1. 8.36 8 **2.** 18.7 19 **3.** 9.831 10

Round to the nearest tenth.

4. 24.316 24.3 **5.** 5.28 5.3 **6.** 23.017 23.0

Round to the nearest hundredth.

7. 58.635 58.64 **8.** 7.214 7.21 **9.** 210.097 210.10

Estimate each sum or difference.

Sample estimates shown; accept reasonable estimates.

10. \$46.78 − \$18.55 \$28 **11.** 12.3 + 4.7 17 **12.** 9.586 + 3.097 13

Solve. *Show your work.*

13. A decimal number changed to 23.7 after it was rounded. Give a decimal number that is less than 23.7 and another that is greater than 23.7 that each round to 23.7. Explain to what place each number was rounded.

To the tenths place; Answers will vary. Accept any number greater than or equal to 23.65 and less than 23.75.

14. When Marla rounded 19.95 to the nearest tenth, she found the number changed to 20. Is this correct? Explain.

correct; The 5 rounds the 9 up to 10. 10 tenths equals 1 one. 19 + 1 = 20

15. Peter decided that the total cost for a \$24.55 pair of jeans and a \$12.25 shirt was \$26.80. Was Peter's answer reasonable? Explain why or why not.

No; \$26.80 is not close to the estimate of \$37, \$25 + \$12.

16. Biruk wants to buy a book for \$15.25 and a book for \$4.85. He wants to pay with one \$20 bill. Use estimation to decide if this is reasonable. Explain to what place value to round for an estimate that is useful in this situation. Possible answer: Estimate to the nearest tenth. \$15.30 + \$4.90, \$15 + \$4 = \$19 and \$0.30 and \$0. 90 > \$1, so paying with one \$20 bill is not reasonable.

Name _____ Date _____

Remembering

Solve. *Show your work.*

1. Matt pours $3\frac{2}{3}$ cups of orange juice into a measuring cup from a large container. Then he pours $1\frac{1}{4}$ cups back into the container. How much orange juice remains in the measuring cup?

$2\frac{5}{12}$ cups

2. The school cafeteria manager orders $7\frac{3}{8}$ pounds of red onions and $10\frac{1}{2}$ pounds of yellow onions. How many pounds of onions did the manager order in all?

$17\frac{7}{8}$ pounds

Subtract.

3.
$$\begin{array}{r} 21{,}445 \\ -\ 3{,}548 \\ \hline 17{,}897 \end{array}$$

4.
$$\begin{array}{r} 980.3 \\ -\ 525.35 \\ \hline 454.95 \end{array}$$

5.
$$\begin{array}{r} 774.12 \\ -248.8 \\ \hline 525.32 \end{array}$$

Use the Distributive Property to rewrite each problem so it has only two factors. Then solve.

6. $(5 \times 600) + (5 \times 400) =$ $5 \times (600 + 400) = 5 \times 1{,}000 = 5{,}000$

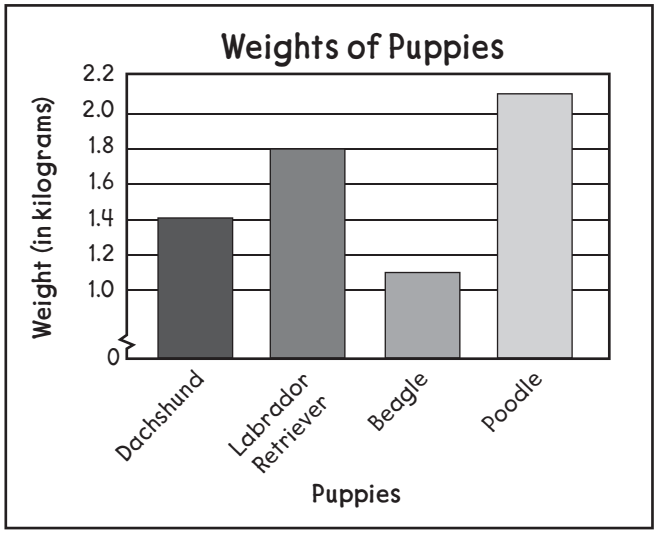
7. $(15 \times 6) + (85 \times 6) =$ $6 \times (15 + 85) = 6 \times 100 = 600$

8. Stretch Your Thinking Name three decimals between 16.4 and 16.5. Draw a number line estimating the placement of all five decimals.

Possible answers: 16.42, 16.469, 16.49

Name _____ Date _____

Jamal made a bar graph to compare the weights of 4 puppies in the animal shelter.



1. How much did the poodle weigh?
   2.1 kg

2. List the puppies in order from heaviest to lightest.
   poodle, Labrador retriever, dachshund, beagle

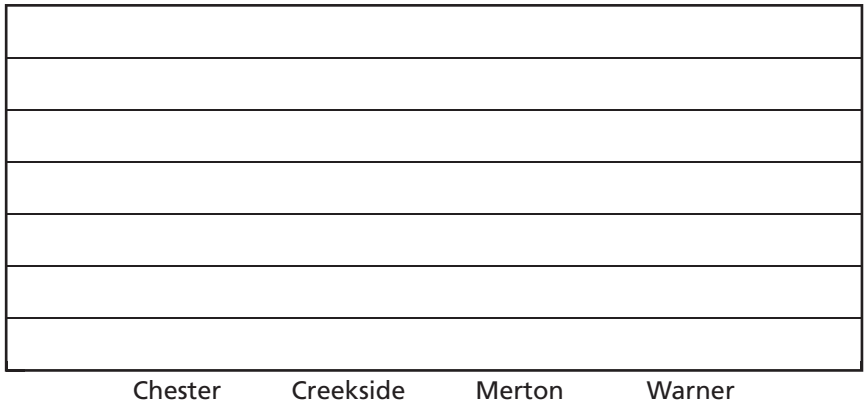
3. What is the combined weights of the Labrador retriever and the beagle?
   2.9 kg

4. How much more did the Labrador retriever weigh than the dachshund?
   0.4 kg

City	Rainfall Amounts
Chester	0.20 cm
Creekside	0.10 cm
Merton	0.05 cm
Warner	0.25 cm

The table shows the amount of rainfall this month in 4 different cities.

5. Make a bar graph showing this information. Remember to give your graph a title, labels, and a scale. Check students' graphs.



Name _____ Date _____

Remembering

Multiply.

1. $45 \cdot 3 =$ 135

2. $431 \cdot 6 =$ 2,586

3. $17 \cdot 32 =$ 544

4. $34 \cdot 67 =$ 2,278

5. $1{,}509 \cdot 3 =$ 4,527

6. $5{,}098 \cdot 7 =$ 35,686

Regroup the numbers using the Associative Property. Then add.

7. $3.6 + (0.4 + 0.25) =$ $(3.6 + 0.4) + 0.25 = 4 + 0.25 = 4.25$

8. $2\frac{6}{10} + (\frac{4}{10} + \frac{4}{5}) =$ $(2\frac{6}{10} + \frac{4}{10}) + \frac{4}{5} = 3 + \frac{4}{5} = 3\frac{4}{5}$

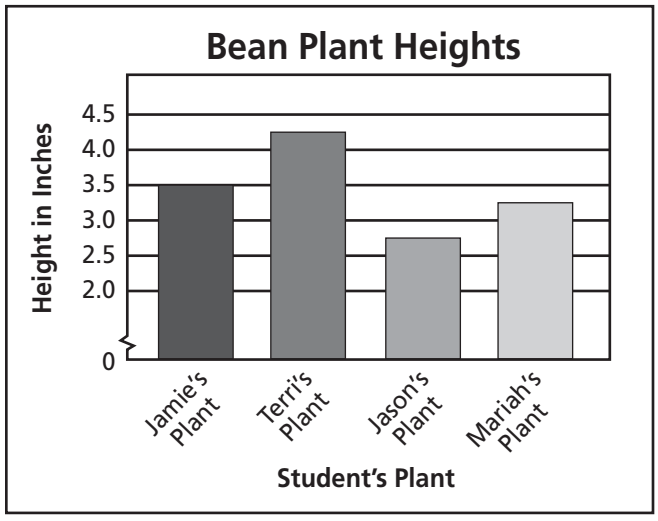
Estimate each sum or difference. Possible estimates are shown. Accept reasonable estimates.

9. $7.535 + 2.706$ 11

10. $\$27.89 - \$12.64$ 15

11. $11.1 + 9.9$ 21

12. Stretch Your Thinking The bar graph shows the heights of bean plants for four students in Mrs. Jarnigan's fourth-grade science class.



Write a two-step problem using the data from the graph.

Possible answer: Cheyenne's plant has a height that is the difference between the heights of Terri's plant and Jamie's plant added to the height of Mariah's plant. How tall is Cheyenne's plant? $4.25 - 3.5 + 3.25 = 4$ inches

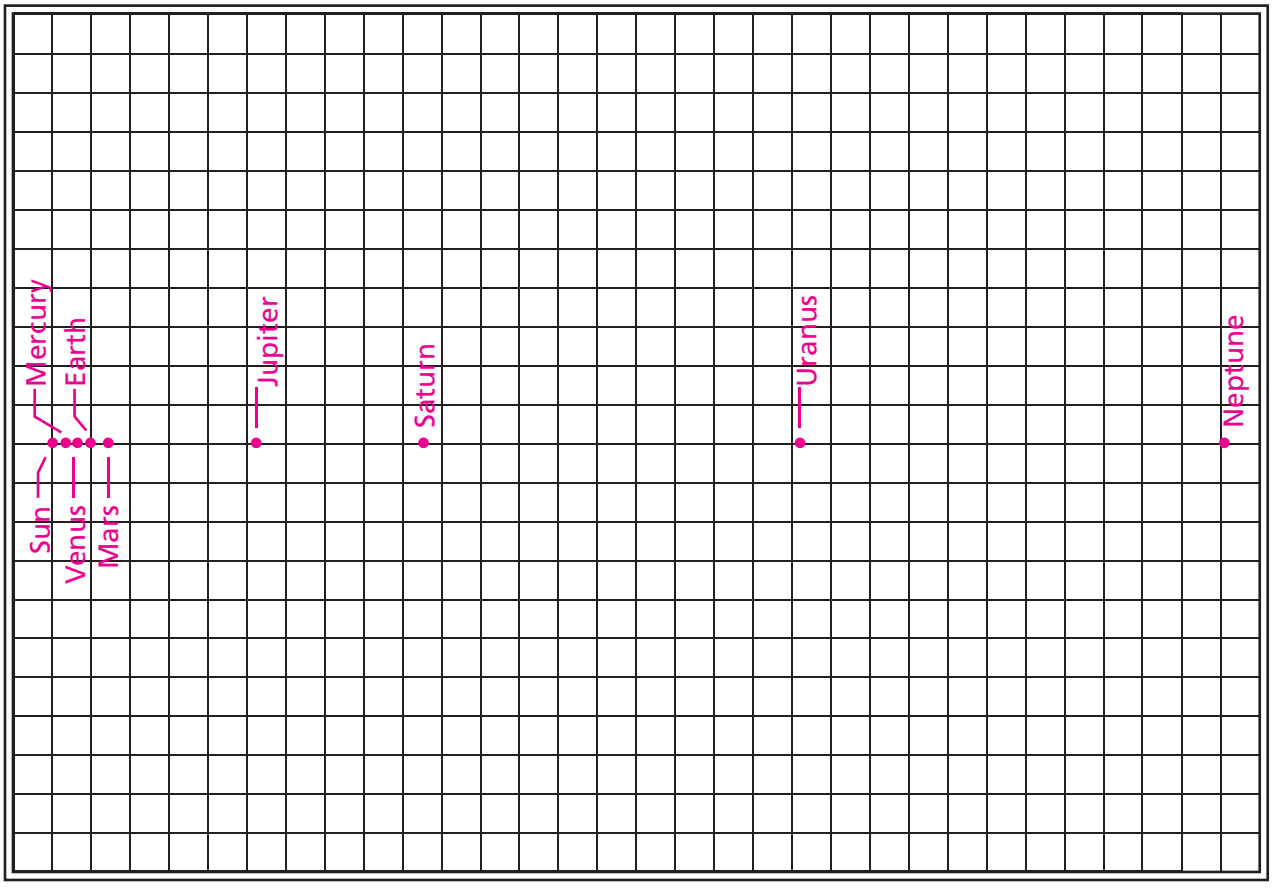
Homework

Name _____ Date _____

Look again at the table on Student Book page 54. It shows how far from the sun the planets in our solar system orbit. For example, it shows that Jupiter (5.2 AU) orbits *about* 5 times farther from the sun than Earth (1 AU) because $1 \times 5 = 5$.

On a grid where 1 grid square = 1 AU, a dot for Earth would be 1 grid square away from the sun, and a dot for Jupiter would be about 5 grid squares away.

On the left side of the grid below, draw a dot to represent the sun. Then using the scale 1 grid square = 1 AU, draw and label a dot for each of the eight planets to show their relative distances from the sun.



Name _____ Date _____

Remembering

Solve. Show your work.

1. During a movie, Kelley eats $12\frac{2}{7}$ ounces of snack mix and Madison eats $15\frac{3}{4}$ ounces of snack mix. How much did they eat altogether?

$28\frac{1}{28}$ ounces

2. Caleb practices the piano for $15\frac{2}{3}$ minutes on Monday and $21\frac{1}{2}$ minutes on Tuesday. How much longer did he practice on Tuesday?

$5\frac{5}{6}$ minutes

Estimate each sum or difference. Possible estimates are shown. Accept reasonable estimates.

3. $13.2 + 52.7$

66

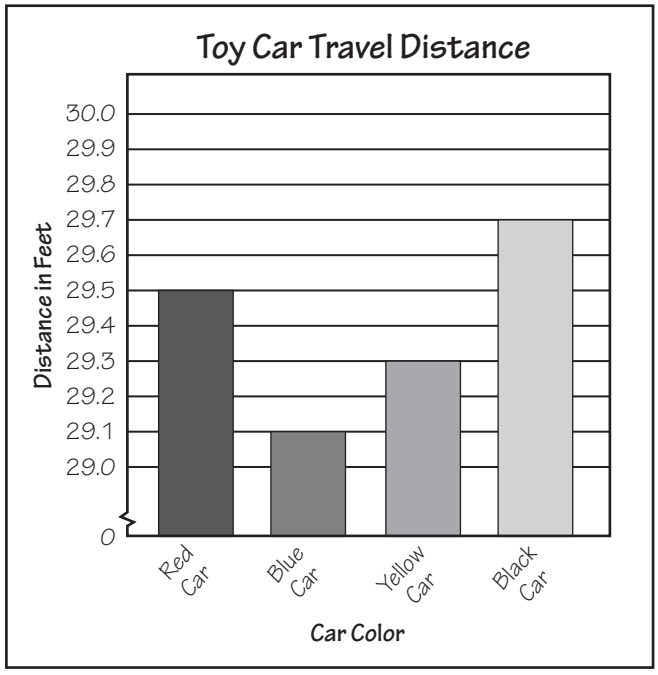
4. $19.454 + 1.897$

21

5. $\$33.03 - \$10.78$

$22

Carly made a bar graph to show how far each of her toy cars traveled.



6. How much farther did Carly's yellow car travel than her blue car?

0.2 foot

7. What is the greatest and least distance traveled? What is the difference between the two distances?

29.7 feet; 29.1 feet; 0.6 foot

8. Stretch Your Thinking Brad has 32 ounces of mixed fruit to share with three friends. He gives 7.65 ounces to Carrie, 8.02 ounces to Joshua, and 6.88 ounces to Terrell. How much mixed fruit is left for Brad?

9.45 ounces

3-1 Homework

Name _____ Date _____

Solve. Write a multiplication equation for each problem.

Miguel swam 6 lengths of the pool. Po Lan swam 3 times as far as Miguel. Lionel swam $\frac{1}{3}$ as far as Miguel.

1. How many lengths did Po Lan swim? 18

Write the equation. $3 \cdot 6 = 18$

2. How many lengths did Lionel swim? 2

Write the equation. $\frac{1}{3} \cdot 6 = 2$

Chris cut a length of rope that was 12 feet long. Dayna cut a rope 4 times as long as Chris's rope. Benita cut a rope $\frac{1}{4}$ as long as Chris's rope.

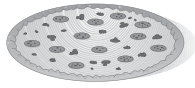
3. How long is Dayna's rope? 48 ft

Write the equation. $4 \cdot 12 = 48$

4. How long is Benita's rope? 3 ft

Write the equation. $\frac{1}{4} \cdot 12 = 3$

Write two statements for each pair of treats. Use the word *times*.

Treat	Number
	24
	8
	2

5. Compare cookies and drinks.

There are 3 times as many cookies as drinks.

There are $\frac{1}{3}$ times as many drinks as cookies.

6. Compare drinks and pizzas.

There are 4 times as many drinks as pizzas.

There are $\frac{1}{4}$ times as many pizzas as drinks.

7. Compare cookies and pizzas.

There are 12 times as many cookies as pizzas.

There are $\frac{1}{12}$ times as many pizzas as cookies.

Solve.

8. $\frac{1}{3} \cdot 18 =$ 6

9. $\frac{1}{4}$ of 12 = 3

10. $\frac{1}{8} \cdot 32 =$ 4

11. $\frac{1}{9}$ of 27 = 3

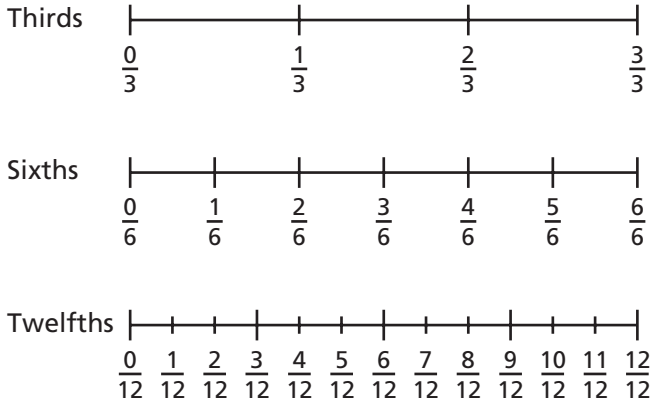
12. $\frac{1}{8} \cdot 56 =$ 7

13. $\frac{1}{3}$ of 15 = 5

3-1 Name Date

Remembering

Use the number lines to complete Exercises 1–3.



1. If you run $\frac{2}{3}$ mile, how many sixths have you run?

$\frac{4}{6}$

2. If you measure $\frac{5}{6}$ meter, how many twelfths have you measured?

$\frac{10}{12}$

3. If you have $\frac{8}{12}$ of a pizza, how many thirds do you have?

$\frac{2}{3}$

Write each fraction as a decimal.

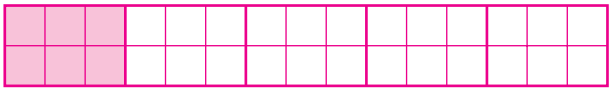
4. $\frac{76}{1{,}000} =$ 0.076 **5.** $\frac{7}{10} =$ 0.7 **6.** $\frac{49}{100} =$ 0.49 **7.** $\frac{32}{1{,}000} =$ 0.032

Add or subtract.

8. $0.28 + 0.43 =$ 0.71 **9.** $0.7 + 0.04 =$ 0.74 **10.** $7.8 - 1.95 =$ 5.85

11. Stretch Your Thinking Draw a diagram that shows $\frac{1}{5}$ times 30 equals 6.

Possible answer:



3-2

Homework

Name _____ Date _____

Multiply.

1. $\frac{2}{3} \cdot 15 =$ 10
2. $\frac{3}{4} \cdot 8 =$ 6
3. $\frac{7}{8} \cdot 32 =$ 28
4. $\frac{2}{9} \cdot 27 =$ 6
5. $\frac{3}{8} \cdot 56 =$ 21
6. $\frac{3}{4} \cdot 16 =$ 12
7. $\frac{2}{3} \cdot 21 =$ 14
8. $\frac{4}{5} \cdot 35 =$ 28
9. $\frac{5}{7} \cdot 28 =$ 20
10. $\frac{4}{9} \cdot 45 =$ 20
11. $\frac{5}{12} \cdot 24 =$ 10
12. $\frac{9}{10} \cdot 70 =$ 63
13. $\frac{7}{9} \cdot 18 =$ 14
14. $\frac{5}{8} \cdot 80 =$ 50
15. $\frac{4}{15} \cdot 45 =$ 12

Solve. *Show your work.*

16. Rebecca has 21 math problems to solve. She has solved $\frac{2}{7}$ of them. How many problems has she solved?

    6 problems

17. Tessa shot 36 free throws. She made 27 of them. What fraction of her free throws did Tessa make?

    $\frac{3}{4}$

18. A carousel has 56 horses. $\frac{3}{8}$ of them are white. How many horses are not white?

    35 horses

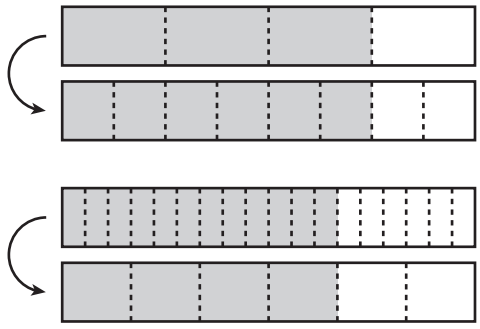
19. Nathan works at a hardware store. Today he sold 48 tools. $\frac{5}{6}$ of the tools he sold were hammers. How many hammers did Nathan sell today?

    40 hammers

3-2 Name _____ Date _____

Remembering

Complete each exercise about the pairs of fraction bars.



1. What equivalent fractions are shown? $\frac{3}{4}, \frac{6}{8}$
2. Identify the multiplier. 2
3. What equivalent fractions are shown? $\frac{12}{18}, \frac{4}{6}$
4. Identify the divisor. 3

Write each amount as a decimal number.

5. $\frac{84}{1{,}000}$ 0.084
6. $\frac{31564}{1{,}000}$ 31.564
7. $\frac{1176}{100}$ 11.76
8. $\frac{876}{1{,}000}$ 0.876

Solve. Write a multiplication equation for each problem.

Jonas has 8 sponsors for the school walk-a-thon.
Maura has 3 times as many sponsors as Jonas.
Trenton has $\frac{1}{4}$ as many sponsors as Jonas.

9. How many sponsors does Maura have? 24
   Write the equation. $8 \cdot 3 = 24$
10. How many sponsors does Trenton have? 2
    Write the equation. $\frac{1}{4} \cdot 8 = 2$
11. **Stretch Your Thinking** Hannah and Jo are driving separately to a restaurant that is 60 miles away from their town. Hannah drives $\frac{3}{5}$ of the distance and Jo drives $\frac{5}{6}$ of the distance before stopping for gasoline. Who has driven farther? How many more miles does each driver need to drive to reach the restaurant?

    Jo has driven $\frac{5}{6} \cdot 60 = 5 \cdot (\frac{1}{6}$ of $60) = 5 \cdot 10 = 50$ miles.

    Hannah has driven $\frac{3}{5} \cdot 60 = 3 \cdot (\frac{1}{5} \cdot 60) = 3 \cdot 12 = 36$ miles.

    Jo has driven farther. Jo has 10 miles to go. Hannah as 24 miles to go.

3-3 **Homework**

Name _____ Date _____

The campers in each cabin at Bear Claw Camp held a contest to see who could walk the farthest in one day. Use the sign to answer the questions. Write your answers as fractions.

1. The campers in Cabin A walked $\frac{1}{4}$ of the way to Otter Ridge. How many miles did they walk?
   $\frac{13}{4}$ miles

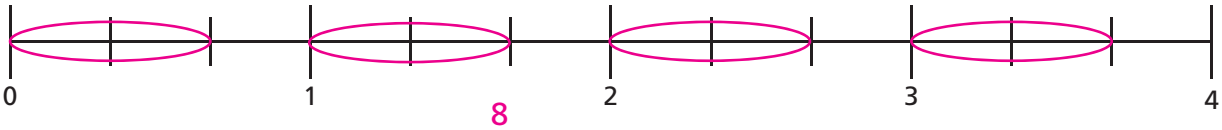
2. The campers in Cabin B walked $\frac{2}{3}$ of the way to Silver Stream. How many miles did they walk?
   $\frac{16}{3}$ miles

3. The campers in Cabin C walked $\frac{3}{5}$ of the way to Fossil Cave. How many miles did they walk?
   $\frac{27}{5}$ miles

4. The campers in Cabin D walked $\frac{1}{6}$ of the way to Mammoth Mountain. How many miles did they walk?
   $\frac{25}{6}$ miles

5. Which group of campers walked the farthest that day?
   Cabin C

6. Show $\frac{2}{3}$ of 4 on the number line.



7. Write $\frac{2}{3}$ of 4 as a fraction. $\frac{8}{3}$

8. Write $\frac{2}{3}$ of 4 as a mixed number. $2\frac{2}{3}$

Multiply. Write your answers as fractions.

9. $\frac{2}{7} \cdot 4 = \frac{8}{7}$
10. $\frac{2}{3} \cdot 8 = \frac{16}{3}$
11. $\frac{5}{6} \cdot 4 = \frac{20}{6}$
12. $\frac{2}{9} \cdot 20 = \frac{40}{9}$
13. $\frac{7}{9} \cdot 2 = \frac{14}{9}$
14. $\frac{3}{8} \cdot 5 = \frac{15}{8}$
15. $\frac{2}{3} \cdot 13 = \frac{26}{3}$
16. $\frac{5}{12} \cdot 18 = \frac{90}{12}$
17. $\frac{5}{9} \cdot 12 = \frac{60}{9}$

3-3 Name _____ Date _____

Remembering

Compare.

1. $\frac{5}{6}$ (>) $\frac{5}{7}$
2. $\frac{1}{5}$ (<) $\frac{1}{4}$
3. $\frac{8}{10}$ (>) $\frac{6}{8}$
4. $\frac{6}{7}$ (<) $\frac{7}{8}$
5. $\frac{2}{3}$ (<) $\frac{3}{4}$
6. $\frac{8}{9}$ (>) $\frac{6}{7}$

Compare.

7. 0.54 (<) 0.65
8. 0.207 (<) 0.342
9. 0.5 (>) 0.47
10. 0.76 (>) 0.67
11. 0.22 (<) 0.41
12. 0.6 (>) 0.06

Multiply.

13. $\frac{4}{5} \cdot 20 =$ 16
14. $\frac{2}{3} \cdot 21 =$ 14
15. $\frac{5}{8} \cdot 24 =$ 15
16. $\frac{1}{9} \cdot 36 =$ 4
17. $\frac{3}{4} \cdot 16 =$ 12
18. $\frac{2}{7} \cdot 14 =$ 4
19. $\frac{3}{12} \cdot 24 =$ 6
20. $\frac{8}{10} \cdot 80 =$ 64
21. $\frac{3}{9} \cdot 45 =$ 15

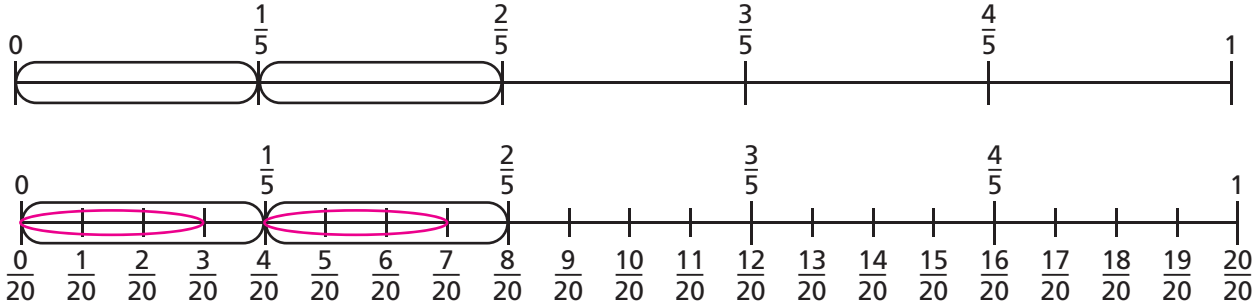
22. **Stretch Your Thinking** Write a multiplication equation using one whole number and one fraction that have a product of $\frac{18}{8}$.

Possible answer: $6 \cdot \frac{3}{8} = \frac{18}{8}$

3-4 **Homework**

Name _____ Date _____

Tanith is using a number line to find $\frac{3}{4} \cdot \frac{2}{5}$. This is her work so far:

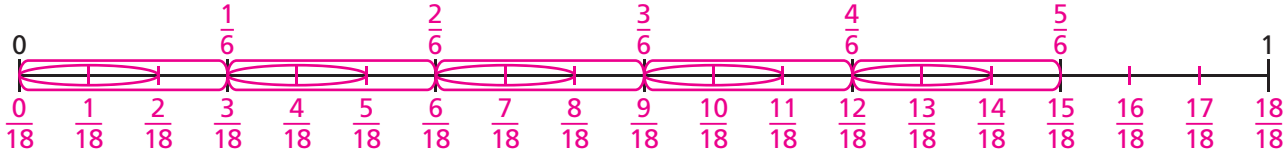


1. Explain Tanith's work so far to someone at home.

2. Finish Tanith's work by circling $\frac{3}{4}$ of each circled fifth. How many 20ths did you circle altogether? 6

What is $\frac{3}{4} \cdot \frac{2}{5}$? $\frac{6}{20}$ or $\frac{3}{10}$

3. Use the number line to find $\frac{2}{3} \cdot \frac{5}{6}$. Label all the parts above and below. $\frac{10}{18}$



Solve. *Show your work.*

4. Four friends at a party popped $\frac{3}{4}$ of a bag of popcorn. They ate half of what was popped. What fraction of the popcorn in the bag did they eat? $\frac{3}{8}$

5. Ashley brought $\frac{7}{8}$ gallon of lemonade to the party. Her friends drank $\frac{2}{3}$ of it. How many gallons of lemonade did they drink? $\frac{7}{12}$ gallon

Multiply. You do not need to simplify.

6. $\frac{2}{7} \cdot \frac{1}{3} = \frac{2}{21}$

7. $\frac{4}{9} \cdot \frac{2}{9} = \frac{8}{81}$

8. $\frac{1}{8} \cdot \frac{5}{6} = \frac{5}{48}$

9. $\frac{2}{7} \cdot 12 = \frac{24}{7}$

10. $\frac{4}{5} \cdot \frac{2}{3} = \frac{8}{15}$

11. $\frac{1}{7} \cdot \frac{3}{5} = \frac{3}{35}$

12. $\frac{9}{10} \cdot \frac{1}{2} = \frac{9}{20}$

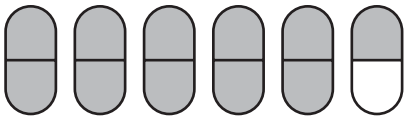
13. $\frac{5}{12} \cdot 3 = \frac{15}{12}$

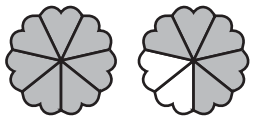
14. $\frac{5}{6} \cdot \frac{1}{6} = \frac{5}{36}$

Name _____ Date _____

Remembering

Name the mixed number shown by the shaded parts.





1. $5\frac{1}{2}$

2. $1\frac{5}{7}$

3. $1\frac{1}{3}$

Add.

4. 454 + 0.65 = 454.65

5. 80.55 + 0.91 = 81.46

6. 31.78 m + 6.2 m = 37.98 m

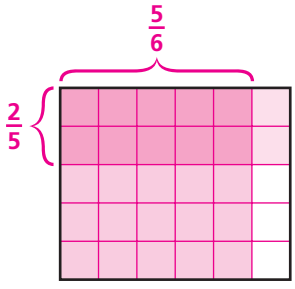
7. Show $\frac{1}{3}$ of 7 on the number line.

8. Write $\frac{1}{3}$ of 7 as a fraction. $\frac{7}{3}$

9. Write $\frac{1}{3}$ of 7 as a mixed number. $2\frac{1}{3}$

10. Stretch Your Thinking Solve for the unknown fraction. Then divide and shade an area model to show the equation. $\frac{2}{5} \cdot ? = \frac{10}{30}$.

$\frac{5}{6}$



3-5 Homework Name _____ Date _____

Multiply. Simplify first if you can.

1. $\frac{2}{5} \cdot \frac{6}{7} =$ $\frac{12}{35}$

2. $\frac{\cancel{4}^{1}}{9} \cdot \frac{1}{\cancel{8}_{2}} =$ $\frac{1}{18}$

3. $\frac{\cancel{5}^{1}}{\cancel{24}_{3}} \cdot \frac{\cancel{8}^{1}}{\cancel{15}_{3}} =$ $\frac{1}{9}$

4. $\frac{2}{17} \cdot \frac{8}{1} =$ $\frac{16}{17}$

5. $\frac{3}{\cancel{4}_{1}} \cdot \frac{\cancel{12}^{3}}{25} =$ $\frac{9}{25}$

6. $\frac{5}{7} \cdot \frac{3}{8} =$ $\frac{15}{56}$

7. $\frac{\cancel{3}^{1}}{\cancel{10}_{5}} \cdot \frac{\cancel{2}^{1}}{\cancel{3}_{1}} =$ $\frac{1}{5}$

8. $\frac{\cancel{5}^{1}}{\cancel{16}_{8}} \cdot \frac{\cancel{2}^{1}}{\cancel{25}_{5}} =$ $\frac{1}{40}$

9. $\frac{\cancel{4}^{1}}{\cancel{35}_{5}} \cdot \frac{\cancel{7}^{1}}{\cancel{12}_{3}} =$ $\frac{1}{15}$

10. $\frac{5}{6} \cdot \frac{7}{1} =$ $\frac{35}{6}$

11. $\frac{\cancel{7}^{1}}{\cancel{9}_{3}} \cdot \frac{\cancel{6}^{2}}{\cancel{49}_{7}} =$ $\frac{2}{21}$

12. $\frac{7}{\cancel{8}_{4}} \cdot \frac{\cancel{2}^{1}}{3} =$ $\frac{7}{12}$

13. Which fraction is not equivalent to the others?

$\frac{3}{15}$ $\frac{2}{10}$ $\frac{1}{5}$ $\frac{9}{45}$ $\frac{10}{50}$ $\frac{6}{40}$ $\frac{7}{35}$ $\frac{100}{500}$

Solve. *Show your work*

14. In the town zoo, $\frac{3}{28}$ of the animals are birds. Of the birds, $\frac{4}{15}$ are birds of prey. What fraction of the animals at the zoo are birds of prey?

$\frac{1}{35}$

15. Tuesday at the zoo, $\frac{5}{12}$ of the visitors were adults. Of these adults, $\frac{3}{10}$ were men. What fraction of the people who visited the zoo on Tuesday were men?

$\frac{1}{8}$

16. On Tuesday, $\frac{14}{25}$ of the souvenirs purchased at the zoo gift shop were stuffed animals. Of the stuffed animals purchased, $\frac{10}{21}$ were bears. What fraction of the souvenirs purchased at the zoo gift shop on Tuesday were stuffed bears?

$\frac{4}{15}$

3-5 Name _____ Date _____

Remembering

Add or subtract.

1. $1\frac{4}{5} + 5\frac{2}{5}$

   $7\frac{1}{5}$

2. $5\frac{1}{6} + 3\frac{5}{6}$

   9

3. $1\frac{2}{3} - \frac{1}{3}$

   $1\frac{1}{3}$

4. $\frac{3}{4} + \frac{5}{4}$

   2

5. $7\frac{8}{9} - 3\frac{5}{9}$

   $4\frac{3}{9}$ or $4\frac{1}{3}$

6. $6 - 4\frac{1}{2}$

   $1\frac{1}{2}$

Subtract.

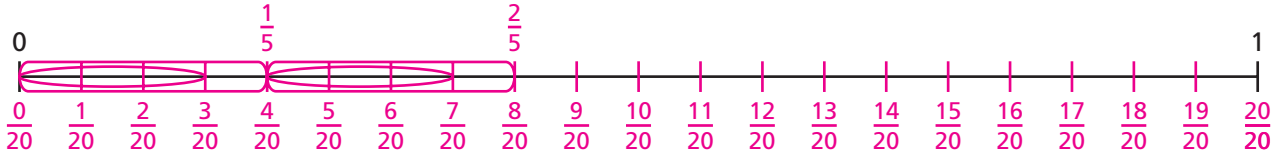
7. $31{,}763 - 6.51 =$ $31{,}756.49$

8. $132.76 - 87.24 =$ 45.52

9. $968.29 - 217.5 =$ 750.79

10. Use the number line to find $\frac{3}{4} \cdot \frac{2}{5}$. Label all the parts above and below.

$\frac{3}{4} \cdot \frac{2}{5} =$ $\frac{6}{20}$



11. **Stretch Your Thinking** Write a word problem that will use the equation $\frac{2}{6} \cdot \frac{8}{10} = x$ in order to solve. Then simplify and multiply to solve.

Possible answer: Jacob scored $\frac{8}{10}$ of the basketball team's points in Saturday's basketball game. Two sixths of the points Jacob scored were from free throws. What fraction of the team's points did Jacob score from free throws? $\frac{2}{6} \cdot \frac{8}{10} = \frac{1}{3} \cdot \frac{4}{5} = \frac{4}{15}$

3-6

Homework

Name _____ Date _____

Find each product by first rewriting each mixed number as a fraction.

1. $\frac{3}{7} \cdot 2\frac{1}{2} =$ $\frac{3}{7} \cdot \frac{5}{2} = \frac{15}{14} = 1\frac{1}{14}$

2. $1\frac{7}{10} \cdot 5 =$ $\frac{17}{10} \cdot \frac{5}{1} = \frac{17}{2} = 8\frac{1}{2}$

3. $2\frac{2}{3} \cdot 4\frac{1}{5} =$ $\frac{8}{3} \cdot \frac{21}{5} = \frac{56}{5} = 11\frac{1}{5}$

4. $5\frac{1}{3} \cdot \frac{3}{8} =$ $\frac{16}{3} \cdot \frac{3}{8} = 2$

5. $\frac{5}{9} \cdot 1\frac{2}{5} =$ $\frac{5}{9} \cdot \frac{7}{5} = \frac{7}{9}$

6. $12 \cdot 2\frac{3}{4} =$ $\frac{12}{1} \cdot \frac{11}{4} = 33$

7. $3\frac{1}{2} \cdot 3\frac{1}{2} =$ $\frac{7}{2} \cdot \frac{7}{2} = \frac{49}{4} = 12\frac{1}{4}$

8. $\frac{1}{9} \cdot 3\frac{9}{10} =$ $\frac{1}{9} \cdot \frac{39}{10} = \frac{13}{30}$

Solve. *Show your work.*

9. The bottom of Zeyda's jewelry box is a rectangle with length $5\frac{3}{8}$ inches and width $3\frac{1}{4}$ inches. What is the area of the bottom of the jewelry box?

$17\frac{15}{32}$ square inches

10. The Patel family went apple picking. The number of red apples they picked was $2\frac{2}{9}$ times the number of green apples they picked. If they picked 45 green apples, how many red apples did they pick?

100 red apples

11. The art museum is $8\frac{1}{2}$ miles from Alison's house. Alison has ridden her bike $\frac{2}{3}$ of the way there so far. How far has she gone?

$5\frac{2}{3}$ miles

3-6 Name Date

Remembering

Add.

1. $\frac{3}{8} + \frac{1}{6}$ $\frac{13}{24}$

2. $\frac{1}{5} + \frac{3}{4}$ $\frac{19}{20}$

3. $\frac{5}{6} + \frac{1}{8}$ $\frac{23}{24}$

4. $\frac{1}{3} + \frac{2}{7}$ $\frac{13}{21}$

5. $\frac{2}{3} + \frac{1}{9}$ $\frac{7}{9}$

6. $\frac{4}{5} + \frac{1}{10}$ $\frac{9}{10}$

Use the Commutative Property to solve for *n*.

7. $55{,}207 + 87{,}331 = 87{,}331 + n$

   $n =$ 55,207

8. $48.76 + 20.08 = 20.08 + n$

   $n =$ 48.76

Multiply. Simplify first if you can.

9. $\frac{2}{3} \cdot \frac{3}{4} =$ $\frac{1}{2}$

10. $\frac{7}{10} \cdot \frac{6}{7} =$ $\frac{3}{5}$

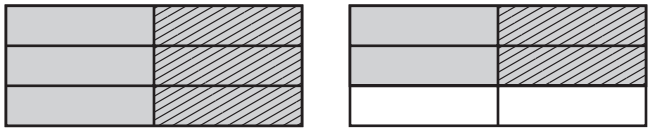
11. $\frac{3}{5} \cdot \frac{5}{6} =$ $\frac{1}{2}$

12. $\frac{5}{6} \cdot \frac{12}{25} =$ $\frac{2}{5}$

13. $\frac{1}{2} \cdot \frac{4}{7} =$ $\frac{2}{7}$

14. $\frac{2}{9} \cdot \frac{3}{8} =$ $\frac{1}{12}$

15. **Stretch Your Thinking** Complete the mixed number equation that is represented by the area model.



$\frac{1}{2} \cdot$ $1\frac{2}{3}$ $= \frac{5}{6}$

3-7 Homework

Name _____ Date _____

Solve.

1. $\frac{3}{4} \cdot \frac{1}{8}$
   $\frac{3}{32}$

2. $\frac{2}{3} - \frac{1}{9}$
   $\frac{5}{9}$

3. $\frac{1}{10} + \frac{1}{5}$
   $\frac{3}{10}$

4. $\frac{2}{7} \cdot 12$
   $\frac{24}{7} = 3\frac{3}{7}$

5. $\frac{1}{5} + \frac{2}{3}$
   $\frac{13}{15}$

6. $\frac{1}{4} + \frac{3}{8}$
   $\frac{5}{8}$

7. $\frac{5}{7} \cdot \frac{5}{6}$
   $\frac{25}{42}$

8. $\frac{11}{12} + 3$
   $3\frac{11}{12}$

9. $\frac{4}{9} - \frac{2}{9}$
   $\frac{2}{9}$

10. $\frac{1}{3} \cdot \frac{1}{8}$
    $\frac{1}{24}$

11. $\frac{7}{8} \cdot \frac{3}{4}$
    $\frac{21}{32}$

12. $10 - \frac{1}{9}$
    $\frac{89}{9} = 9\frac{8}{9}$

Solve. *Show your work.*

13. Rodrigo's fish bowl holds $\frac{7}{8}$ gallon of water. It is now $\frac{1}{2}$ full. How much water is in it?
    $\frac{7}{16}$ gallon

14. Kenya jumped $7\frac{1}{6}$ feet. Janet jumped $6\frac{1}{3}$ feet. How much farther did Kenya jump?
    $\frac{5}{6}$ foot

15. A group of hikers walked $8\frac{7}{10}$ miles to Caribou Cave and then $5\frac{1}{5}$ miles to Silver Stream. How far did they walk altogether?
    $13\frac{9}{10}$ miles

16. A recipe calls for $\frac{3}{4}$ cup of flour. Estevan wants to make $\frac{1}{3}$ of the recipe. How much flour will he need?
    $\frac{1}{4}$ cup

17. A truck was carrying $2\frac{1}{8}$ tons of sand. When it arrived, only $1\frac{1}{2}$ tons of sand were left. How much sand was lost along the way?
    $\frac{5}{8}$ ton

Name _____ Date _____

Remembering

Subtract.

1. $\frac{3}{4} - \frac{1}{6}$ $\frac{7}{12}$

2. $\frac{2}{9} - \frac{1}{10}$ $\frac{11}{90}$

3. $\frac{7}{8} - \frac{1}{4}$ $\frac{5}{8}$

4. $\frac{6}{7} - \frac{1}{3}$ $\frac{11}{21}$

5. $\frac{4}{5} - \frac{2}{3}$ $\frac{2}{15}$

6. $\frac{1}{2} - \frac{1}{8}$ $\frac{3}{8}$

Estimate each sum or difference. Sample estimates shown; accept reasonable estimates.

7. 6.759 + 2.099 9

8. \$44.25 − \$21.76 \$22

9. 14.6 + 2.4 17

Find each product by first rewriting each mixed number as a fraction.

10. $\frac{5}{8} \cdot 3\frac{1}{3} = \frac{5}{8} \cdot \frac{10}{3} = \frac{25}{12} = 2\frac{1}{12}$

11. $4\frac{3}{5} \cdot 5 = \frac{23}{5} \cdot \frac{5}{1} = \frac{23}{1} = 23$

12. $1\frac{2}{5} \cdot 3\frac{4}{9} = \frac{7}{5} \cdot \frac{31}{9} = \frac{217}{45} = 4\frac{37}{45}$

13. $6\frac{1}{5} \cdot \frac{5}{8} = \frac{31}{5} \cdot \frac{5}{8} = \frac{31}{8} = 3\frac{7}{8}$

14. **Stretch Your Thinking** Give an example that shows how to use the Distributive Property to multiply a number by a sum. All of the numbers you use should be mixed numbers or fractions.

Possible answer: $\frac{2}{3} \cdot (2\frac{1}{4} + \frac{5}{6}) = \frac{2}{3} \cdot 2\frac{1}{4} + \frac{2}{3} \cdot \frac{5}{6} = \frac{2}{3} \cdot \frac{9}{4} + \frac{2}{3} \cdot \frac{5}{6} = \frac{3}{2} + \frac{5}{9} = \frac{37}{18} = 2\frac{1}{18}$

3-8

Homework

Name _____ Date _____

Complete each fraction box.

1.

$\frac{7}{8}$ and $\frac{3}{4}$	
$>$	$\frac{7}{8} > \frac{3}{4}$ or $\frac{7}{8} > \frac{6}{8}$
$+$	$\frac{7}{8} + \frac{3}{4} = \frac{7}{8} + \frac{6}{8} = \frac{13}{8} = 1\frac{5}{8}$
$-$	$\frac{7}{8} - \frac{3}{4} = \frac{7}{8} - \frac{6}{8} = \frac{1}{8}$
$\cdot$	$\frac{7}{8} \cdot \frac{3}{4} = \frac{21}{32}$

2.

$\frac{1}{2}$ and $\frac{3}{5}$	
$>$	$\frac{3}{5} > \frac{1}{2}$ or $\frac{6}{10} > \frac{5}{10}$
$+$	$\frac{1}{2} + \frac{3}{5} = \frac{5}{10} + \frac{6}{10} = \frac{11}{10} = 1\frac{1}{10}$
$-$	$\frac{3}{5} - \frac{1}{2} = \frac{6}{10} - \frac{5}{10} = \frac{1}{10}$
$\cdot$	$\frac{1}{2} \cdot \frac{3}{5} = \frac{3}{10}$

Solve. *Show your work.*

3. The Eagle Trucking Company must deliver $\frac{7}{8}$ ton of cement blocks and $\frac{5}{8}$ ton of bricks to one place. How much will this load weigh?

$1\frac{1}{2}$ tons

4. A truck carried $3\frac{1}{3}$ tons of sand, but lost $\frac{1}{4}$ ton along the way. How many tons of sand were delivered?

$3\frac{1}{12}$ tons

5. The trucking company also needs to deliver $1\frac{2}{3}$ tons of oak logs and $1\frac{7}{12}$ tons of maple logs. Which load weighs more?

oak logs

6. In a load of $\frac{3}{4}$ ton of steel rods, $\frac{1}{8}$ of them are bent. How many tons of steel rods are bent?

$\frac{3}{32}$ ton

7. The company delivered $1\frac{3}{5}$ tons of bricks to one building site. They delivered $2\frac{1}{2}$ times this much to a second site. What was the weight of the load the company delivered to the second site?

4 tons

3-8 Name _____ Date _____

Remembering

Multiply.

1. $\begin{array}{r} 2{,}548 \\ \times \quad 5 \\ \hline 12{,}740 \end{array}$

2. $\begin{array}{r} 21 \\ \times 45 \\ \hline 945 \end{array}$

3. $\begin{array}{r} 3{,}015 \\ \times \quad 6 \\ \hline 18{,}090 \end{array}$

4. $\begin{array}{r} 33 \\ \times \ 4 \\ \hline 132 \end{array}$

5. $\begin{array}{r} 65 \\ \times 87 \\ \hline 5{,}655 \end{array}$

6. $\begin{array}{r} 215 \\ \times \ 9 \\ \hline 1{,}935 \end{array}$

Find each product by first rewriting each mixed number as a fraction.

7. $4\frac{4}{9} \cdot 2\frac{2}{3} = \frac{40}{9} \cdot \frac{8}{3} = \frac{320}{27} = 11\frac{23}{27}$

8. $6\frac{1}{5} \cdot 10 = \frac{31}{5} \cdot \frac{10}{1} = \frac{62}{1} = 62$

9. $3\frac{5}{6} \cdot \frac{12}{13} = \frac{23}{6} \cdot \frac{12}{13} = \frac{46}{13} = 3\frac{7}{13}$

10. $5\frac{1}{3} \cdot \frac{3}{5} = \frac{16}{3} \cdot \frac{3}{5} = \frac{16}{5} = 3\frac{1}{5}$

Solve.

11. $\frac{6}{7} - \frac{2}{7}$
$\frac{4}{7}$

12. $\frac{4}{9} + \frac{2}{3}$
$1\frac{1}{9}$

13. $\frac{2}{3} \cdot \frac{9}{10}$
$\frac{3}{5}$

14. $\frac{3}{5} \cdot \frac{5}{8}$
$\frac{3}{8}$

15. $8 - \frac{1}{7}$
$\frac{55}{7} = 7\frac{6}{7}$

16. $\frac{1}{6} + \frac{3}{8}$
$\frac{13}{24}$

17. **Stretch Your Thinking** Write and solve a word problem that requires multiplying two mixed numbers.

Possible answer: Taylor worked $6\frac{5}{6}$ hours doing yard work one weekend. The next weekend, he worked $1\frac{1}{2}$ times as long as he did the previous weekend. How many hours did Taylor work on the second weekend? $10\frac{1}{4}$ hours

3-9

Homework

Name _____ Date _____

Predict whether the product will be greater than, less than, or equal to the second factor. Then compute the product. Predictions may vary.

1. $\frac{4}{5} \cdot 6 = x$

Predict: x (<) 6

Compute: $x =$ $4\frac{4}{5}$

2. $1\frac{1}{9} \cdot 6 = x$

Predict: x (>) 6

Compute: $x =$ $6\frac{2}{3}$

3. $\frac{10}{10} \cdot 6 = x$

Predict: x (=) 6

Compute: $x =$ 6

4. $\frac{2}{2} \cdot \frac{5}{6} = x$

Predict: x (=) $\frac{5}{6}$

Compute: $x =$ $\frac{5}{6}$

5. $\frac{5}{6} \cdot \frac{5}{6} = x$

Predict: x (<) $\frac{5}{6}$

Compute: $x =$ $\frac{25}{36}$

6. $1\frac{1}{3} \cdot \frac{5}{6} = x$

Predict: x (>) $\frac{5}{6}$

Compute: $x =$ $1\frac{1}{9}$

Solve. Show your work.

7. James is $1\frac{3}{7}$ times as tall as his brother. His brother is $3\frac{1}{2}$ feet tall.

Is James's height more or less than $3\frac{1}{2}$ feet?

more

How tall is James?

5 feet

8. South Middle School has 750 students. North Middle School has $\frac{13}{15}$ times as many students as South.

Does North Middle School have more or fewer than 750 students?

fewer

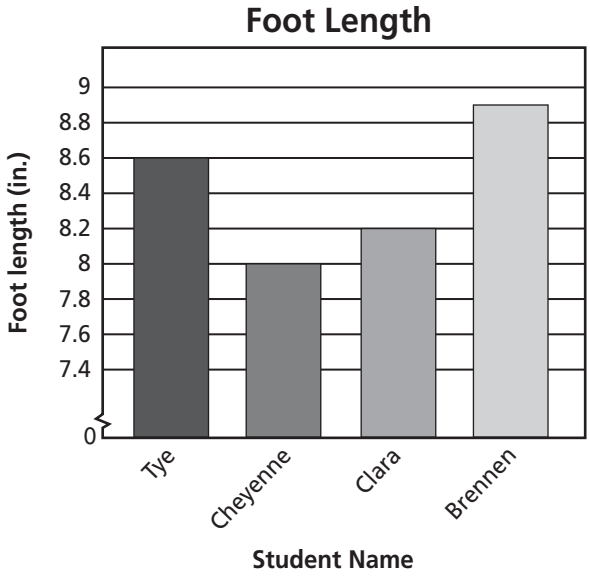
How many students attend North Middle School?

650 students

3-9 Name _____ Date _____

Remembering

Perry measured the foot length of four friends for a science fair experiment. Then, he made a bar graph to display his results.



1. How much longer is Brennen's foot than Clara's foot?

0.7 inch

2. What is the difference between the longest foot and the shortest foot?

0.9 inch

Solve.

3. $\frac{7}{8} \cdot \frac{4}{9}$ $\frac{7}{18}$

4. $11 - \frac{3}{4}$ $10\frac{1}{4}$

5. $\frac{4}{5} + \frac{7}{10}$ $\frac{15}{10} = 1\frac{1}{2}$

6. $\frac{9}{12} - \frac{5}{12}$ $\frac{1}{3}$

7. $\frac{7}{15} + \frac{2}{3}$ $\frac{17}{15} = 1\frac{2}{15}$

8. $\frac{5}{6} \cdot \frac{9}{11}$ $\frac{15}{22}$

Complete each fraction box.

$\frac{7}{12}$ and $\frac{5}{6}$	
>	$\frac{5}{6} > \frac{7}{12}$ or $\frac{10}{12} > \frac{7}{12}$
+	$\frac{5}{6} + \frac{7}{12} = \frac{10}{12} + \frac{7}{12} = \frac{17}{12} = 1\frac{5}{12}$
−	$\frac{5}{6} - \frac{7}{12} = \frac{10}{12} - \frac{7}{12} = \frac{3}{12} = \frac{1}{4}$
·	$\frac{5}{6} \cdot \frac{7}{12} = \frac{35}{72}$

$\frac{4}{5}$ and $\frac{2}{3}$	
>	$\frac{4}{5} > \frac{2}{3}$ or $\frac{12}{15} > \frac{10}{15}$
+	$\frac{4}{5} + \frac{2}{3} = \frac{12}{15} + \frac{10}{15} = \frac{22}{15} = 1\frac{7}{15}$
−	$\frac{4}{5} - \frac{2}{3} = \frac{12}{15} - \frac{10}{15} = \frac{2}{15}$
·	$\frac{4}{5} \cdot \frac{2}{3} = \frac{8}{15}$

9. Stretch Your Thinking Write two multiplication equations using fractions and mixed numbers. Write one equation that will have a product greater than the first factor. Then write another equation that will have a product less than the first factor.

Possible answer: $1\frac{4}{9} \cdot 2\frac{3}{8} = 3\frac{31}{72}$; $3\frac{1}{8} \cdot \frac{2}{3} = \frac{25}{12} = 2\frac{1}{12}$

3-10 Homework

Name _____ Date _____

Divide

1. $5 \div 6 =$ $\frac{5}{6}$
2. $9 \div \frac{1}{5} =$ 45
3. $33 \div 30 =$ $\frac{11}{10} = 1\frac{1}{10}$
4. $8 \div \frac{1}{6} =$ 48
5. $3 \div 10 =$ $\frac{3}{10}$
6. $4 \div \frac{1}{9} =$ 36
7. $100 \div \frac{1}{6} =$ 600
8. $1 \div 100 =$ $\frac{1}{100}$
9. $\frac{1}{5} \div 8 =$ $\frac{1}{40}$
10. $\frac{1}{8} \div 7 =$ $\frac{1}{56}$
11. $\frac{1}{2} \div 9 =$ $\frac{1}{18}$
12. $\frac{1}{3} \div 5 =$ $\frac{1}{15}$

Solve. *Show your work.*

13. Alexander is dividing oranges into eighths. He has 5 oranges. How many eighths will he have?
    40 eighths

14. Carrie has 32 ounces of ice cream to divide equally among 10 people. How much ice cream will each person get?
    $3\frac{1}{5}$ ounces

15. Nayati wants to swim 50 miles this school year. She plans to swim $\frac{1}{4}$ mile each day. How many days will it take her to swim 50 miles?
    200 days

16. Eric has $\frac{1}{3}$ of a watermelon to share equally with 3 friends. How much will each person get?
    $\frac{1}{12}$ watermelon

17. A gardener needs to pack 16 pounds of beans into 20 bags. He wants all the bags to weigh about the same. About how much will each bag weigh?
    $\frac{4}{5}$ pound

Name _____ Date _____

Remembering

Add or subtract.

1. $2\frac{3}{4} - 1\frac{5}{8} = 1\frac{1}{8}$

2. $4\frac{2}{3} + 1\frac{5}{9} = 6\frac{2}{9}$

3. $10\frac{1}{2} - 3\frac{4}{5} = 6\frac{7}{10}$

4. $7 - 2\frac{1}{6} = 4\frac{5}{6}$

5. $3\frac{2}{5} + 4\frac{5}{6} = 8\frac{7}{30}$

6. $8\frac{1}{3} + 1\frac{3}{4} = 10\frac{1}{12}$

Complete each fraction box.

7.

$\frac{2}{5}$ and $\frac{2}{7}$	
$>$	$\frac{2}{5} > \frac{2}{7}$ or $\frac{14}{35} > \frac{10}{35}$
$+$	$\frac{2}{5} + \frac{2}{7} = \frac{14}{35} + \frac{10}{35} = \frac{24}{35}$
$-$	$\frac{2}{5} - \frac{2}{7} = \frac{14}{35} - \frac{10}{35} = \frac{4}{35}$
$\cdot$	$\frac{2}{5} \cdot \frac{2}{7} = \frac{4}{35}$

8.

$\frac{5}{6}$ and $\frac{6}{7}$	
$>$	$\frac{6}{7} > \frac{5}{6}$ or $\frac{36}{42} > \frac{35}{42}$
$+$	$\frac{6}{7} + \frac{5}{6} = \frac{36}{42} + \frac{35}{42} = \frac{71}{42} = 1\frac{29}{42}$
$-$	$\frac{6}{7} - \frac{5}{6} = \frac{36}{42} - \frac{35}{42} = \frac{1}{42}$
$\cdot$	$\frac{6}{7} \cdot \frac{5}{6} = \frac{30}{42} = \frac{5}{7}$

Predict whether the product will be greater than, less than, or equal to the second factor. Then compute the product. Predictions may vary.

9. $\frac{2}{3} \cdot 5 = x$

Predict: x (<) 5

Compute: $x =$ $3\frac{1}{3}$

10. $\frac{3}{3} \cdot 5 = x$

Predict: x (=) 5

Compute: $x =$ 5

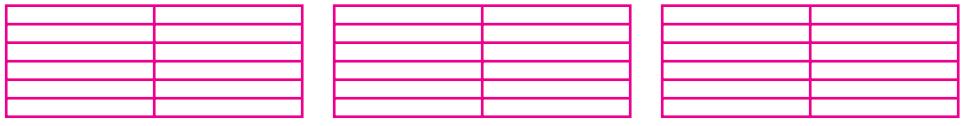
11. $1\frac{1}{6} \cdot 5 = x$

Predict: x (>) 5

Compute: $x =$ $5\frac{5}{6}$

12. **Stretch Your Thinking** Draw a diagram to show how many twelfths there are in 3. Describe a situation in which you would need to know how many twelfths there are in 3.

Possible answer: An inch is $\frac{1}{12}$ of a foot, so the number of inches in 3 feet is the number of twelfths in 3.



3-11 **Homework**

Name _____ Date _____

1. Consider the division problem $\frac{1}{2} \div 3$.

Describe a situation this division could represent.

Situations will vary.

Draw a diagram to represent the division. Then find the solution.

$\frac{1}{6}$; Diagrams will vary. Check students' work.

Write an equation. Then solve. Equations may vary. *Show your work.*

2. A rectangle has an area of 12 square feet and a length of 5 feet. What is its width?

$5 \cdot w = 12$; $2\frac{2}{5}$ feet

3. A tortoise must walk $\frac{1}{12}$ mile to visit a friend. He plans to break the journey into four equal parts with breaks in between. How long will each part of his journey be?

$x = \frac{1}{12} \div 4$; $\frac{1}{48}$ mile

4. Harry worked 7 hours last week. This is $\frac{1}{3}$ as many hours as Aidan worked. How many hours did Aidan work?

$\frac{1}{3} \cdot a = 7$; 21 hours

5. Lin is a camp counselor. She is making small bags of trail mix for campers to take on a hike. She has 2 pounds of raisins and is putting $\frac{1}{8}$ pound in each bag. How many bags can she fill before she runs out of raisins?

$x = 2 \div \frac{1}{8}$; 16 bags

6. Mr. Ramirez bought $\frac{1}{4}$ pounds of cashews. He divided the cashews equally among his three children. How much did each child get?

$x = \frac{1}{4} \div 3$; $\frac{1}{12}$ pound

3-11 Name _____ Date _____

Remembering

Add or subtract.

1. $1\frac{1}{8} + 4\frac{2}{3} = 5\frac{19}{24}$

2. $6\frac{1}{4} - 4\frac{5}{6} = 1\frac{5}{12}$

3. $9\frac{1}{3} + 7\frac{8}{9} = 17\frac{2}{9}$

4. $5\frac{2}{7} + 5\frac{11}{14} = 11\frac{1}{14}$

5. $4 - 2\frac{2}{5} = 1\frac{3}{5}$

6. $6\frac{5}{8} + 3\frac{1}{2} = 10\frac{1}{8}$

Predict whether the product will be greater than, less than, or equal to the second factor. Then compute the product. Predictions may vary.

7. $\frac{5}{5} \cdot 9 = x$
   Predict: x (=) 9
   Compute: $x =$ 9

8. $\frac{7}{8} \cdot 9 = x$
   Predict: x (<) 9
   Compute: $x =$ $7\frac{7}{8}$

9. $1\frac{3}{5} \cdot 9 = x$
   Predict: x (>) 9
   Compute: $x =$ $14\frac{2}{5}$

10. $1\frac{1}{2} \cdot \frac{4}{5} = x$
    Predict: x (>) $\frac{4}{5}$
    Compute: $x =$ $1\frac{1}{5}$

11. $\frac{6}{6} \cdot \frac{4}{5} = x$
    Predict: x (=) $\frac{4}{5}$
    Compute: $x =$ $\frac{4}{5}$

12. $\frac{2}{5} \cdot \frac{4}{5} = x$
    Predict: x (<) $\frac{4}{5}$
    Compute: $x =$ $\frac{8}{25}$

Divide.

13. $6 \div \frac{1}{4} =$ 24

14. $2 \div 3 =$ $\frac{2}{3}$

15. $10 \div 3 =$ $3\frac{1}{3}$

16. $200 \div \frac{1}{4} =$ 800

17. $\frac{1}{4} \div 8 =$ $\frac{1}{32}$

18. $\frac{1}{7} \div 6 =$ $\frac{1}{42}$

19. **Stretch Your Thinking** Harrison is playing a board game that has a path of 100 spaces. After his first turn, he is $\frac{1}{5}$ of the way along the spaces. On his second turn, he moves $\frac{1}{4}$ fewer spaces than he moved on his first turn. On his third turn, he moves $1\frac{1}{4}$ times as many spaces than he moved on his first turn. What space is he on after three turns?

60

3-12

Homework

Name _____ Date _____

Solve.

1. $5 \cdot \frac{1}{3} =$ $\frac{5}{3}$
2. $5 \div \frac{1}{3} =$ 15
3. $\frac{1}{8} \div 2 =$ $\frac{1}{16}$
4. $27 \div 10 =$ $2\frac{7}{10}$
5. $5 \div \frac{1}{100} =$ 500
6. $12 \cdot \frac{1}{9} =$ $1\frac{1}{3}$
7. $\frac{3}{5} \cdot \frac{10}{27} =$ $\frac{2}{9}$
8. $16 \div \frac{1}{4} =$ 64
9. $\frac{1}{5} \div 10 =$ $\frac{1}{50}$
10. $10 \div \frac{1}{5} =$ 50
11. $\frac{1}{8} \cdot 14 =$ $1\frac{3}{4}$
12. $18 \div 20 =$ $\frac{9}{10}$

Tell whether you need to multiply or divide. Then solve. *Show your work.*

Equations will vary. Possible equations are given.

13. A dime weighs about $\frac{1}{12}$ ounce. Jody has 1 pound (16 ounces) of dimes. About many dimes does she have?

    Divide; 192 dimes

14. Maddie has 180 coins. Of these coins, $\frac{1}{12}$ are dimes. About how many dimes does she have?

    Multiply; 15 dimes

15. A rectangle has length 3 feet and width $\frac{1}{4}$ foot. What is the area of the rectangle?

    Multiply; $\frac{3}{4}$ square foot

16. A rectangle has area 3 square feet and width $\frac{1}{2}$ foot. What is the length of the rectangle?

    Divide; 6 feet

17. Nisha wants to study 5 hours for the spelling bee. If she studies $\frac{1}{3}$ hour per night, how many nights will she have to study?

    Divide; 15 nights

3-12 Name _____ Date _____

Remembering

Multiply.

1. $134 \cdot 5 =$ 670

2. $44 \cdot 21 =$ 924

3. $7 \cdot 57 =$ 399

4. $4{,}507 \cdot 3 =$ 13,521

5. $36 \cdot 76 =$ 2,736

6. $1{,}928 \cdot 6 =$ 11,568

Divide.

7. $\frac{1}{9} \div 2 =$ $\frac{1}{18}$

8. $100 \div \frac{1}{3} =$ 300

9. $\frac{1}{5} \div 4 =$ $\frac{1}{20}$

10. $4 \div 5 =$ $\frac{4}{5}$

11. $12 \div 5 =$ $2\frac{2}{5}$

12. $8 \div \frac{1}{7} =$ 56

Write an equation. Then solve. Equations may vary.

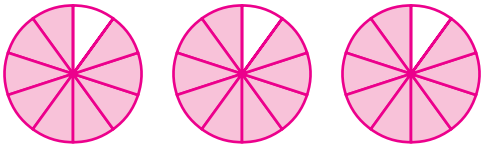
Show your work.

13. Marc is running 5 kilometers at track practice. He decides to break the run into 3 equal lengths. How long will each length be?

$x = 5 \div 3$; $1\frac{2}{3}$ km

14. Stretch Your Thinking Using a whole number and a fraction as factors, write a multiplication equation with a product less than the whole number factor. Draw a picture to show how the product is less than the whole number factor.

Possible answer: $\frac{9}{10} \cdot 3 = 2\frac{7}{10}$



3-13 **Homework**

Name _____ Date _____

Solve. *Show your work.*

1. Dan's Ice Cream comes in cartons of two sizes. The large carton holds $4\frac{1}{2}$ pounds. The small carton holds $1\frac{3}{4}$ pounds less. How much ice cream does the small carton hold?

$2\frac{3}{4}$ pounds

2. Mac picked four baskets of blueberries. The weights of the berries in pounds are given below. Order the weights from lightest to heaviest.

$\frac{5}{4}$ $\frac{9}{10}$ $\frac{4}{5}$ $\frac{13}{20}$

$\frac{13}{20}$, $\frac{4}{5}$, $\frac{9}{10}$, $\frac{5}{4}$

3. Four cones of Dan's Ice Cream hold $\frac{1}{2}$ pound. How much ice cream does each cone hold?

$\frac{1}{8}$ pound

4. If a dish of ice cream holds $\frac{1}{4}$ pound, how many dishes can you get from a $4\frac{1}{2}$-pound carton of Dan's Ice Cream?

18 dishes

Solve. Give your answer in simplest form.

5. $3 \div \frac{1}{5} =$ 15

6. $1\frac{3}{4} + \frac{11}{16} =$ $2\frac{7}{16}$

7. $\frac{9}{14} \cdot 2\frac{1}{3} =$ $1\frac{1}{2}$

8. $2\frac{3}{5} \cdot 6 =$ $15\frac{3}{5}$

9. $\frac{1}{3} + \frac{3}{5} =$ $\frac{14}{15}$

10. $\frac{5}{6} + \frac{8}{9} =$ $1\frac{13}{18}$

11. $\frac{1}{8} \div 4 =$ $\frac{1}{32}$

12. $\frac{2}{5} - \frac{1}{10} =$ $\frac{3}{10}$

13. $3\frac{5}{7} - 1\frac{1}{2} =$ $2\frac{3}{14}$

14. $\frac{7}{8} \cdot \frac{2}{7} =$ $\frac{1}{4}$

3-13 Name _____ Date _____

Remembering

Use benchmarks of 0, $\frac{1}{2}$, and 1 to estimate the sum or difference. Then find the actual sum or difference.

1. $\frac{5}{10} + \frac{4}{9}$

Estimate: 1

Sum: $\frac{85}{90}$ or $\frac{17}{18}$

2. $\frac{13}{14} - \frac{3}{7}$

Estimate: $\frac{1}{2}$

Difference: $\frac{1}{2}$

3. $\frac{8}{9} - \frac{7}{8}$

Estimate: 0

Difference: $\frac{1}{72}$

4. $\frac{13}{14} + \frac{3}{4}$

Estimate: 2

Sum: $1\frac{19}{28}$

Write an equation. Then solve. Equations may vary. *Show your work.*

5. A rectangle has an area of 20 square feet and a length of 6 feet. What is its width?

$6 \cdot w = 20$; $3\frac{1}{3}$ feet

6. Bailey attends gymnastics practice for 8 hours each week. This is $\frac{1}{4}$ the number of hours that the gym is open for practice. How many hours is the gym open for practice?

$\frac{1}{4} \cdot a = 8$; 32 hours

Solve.

7. $\frac{1}{4} \div 3 =$ $\frac{1}{12}$

8. $\frac{1}{4} \cdot 3 =$ $\frac{3}{4}$

9. $14 \cdot \frac{1}{6} =$ $2\frac{1}{3}$

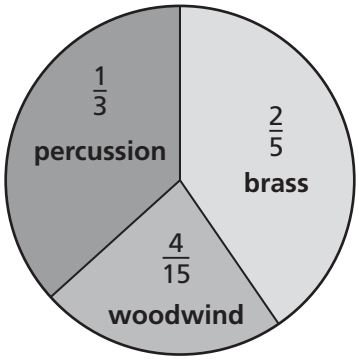
10. Stretch Your Thinking How is solving $\frac{1}{8} \div 5$ different from solving $\frac{1}{8} \cdot 5$?

Possible answer: To solve $\frac{1}{8} \div 5$, multiply $\frac{1}{8}$ by the reciprocal of 5: $\frac{1}{8} \cdot \frac{1}{5} = \frac{1}{40}$. To solve $\frac{1}{8} \cdot 5$, first rewrite 5 as $\frac{5}{1}$. Then, multiply the two fractions: $\frac{1}{8} \cdot \frac{5}{1} = \frac{5}{8}$.

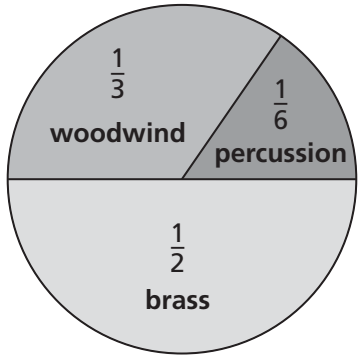
Name _____ Date _____

These graphs show the instruments in two different high school marching bands.

Carter School Marching Band



Reagan School Marching Band



Solve. Use the circle graphs. *Show your work.*

1. The Reagan School Marching Band has three percussion musicians. How many musicians altogether are in the band?

18 musicians

2. There are 30 musicians in the Carter School Marching Band. How many of them play brass instruments?

12 musicians

Suppose both bands decide to combine and perform as one band.

3. What fraction of the band members will play a brass instrument?

$\frac{7}{16}$

4. What fraction of the band members will play a percussion instrument?

$\frac{13}{48}$

5. What fraction of the band members will play a woodwind instrument?

$\frac{7}{24}$

3-14 Name _____ Date _____

Remembering

Solve. Explain how you know your answer is reasonable. Show your work.

Explanations may vary.

1. James's garden has a length of $12\frac{1}{4}$ feet and a width of $9\frac{2}{3}$ feet. What length of fencing will he need to surround his garden?

Answer: $43\frac{5}{6}$ feet

Why is the answer reasonable?

$12\frac{1}{4}$ rounds to 12. $9\frac{2}{3}$ rounds to 10. The answer should be about 12 + 12 + 10 + 10, or 44

Solve.

2. $\frac{1}{11} \div 3 = \frac{1}{33}$

3. $6 \div \frac{1}{3} = 18$

4. $\frac{2}{3} \cdot \frac{5}{7} = \frac{10}{21}$

5. $\frac{1}{12} \div 5 = \frac{1}{60}$

6. $7 \cdot \frac{1}{8} = \frac{7}{8}$

7. $\frac{1}{5} \cdot 12 = 2\frac{2}{5}$

Solve. Show your work.

8. Kayla packs 4 boxes that weigh $\frac{1}{6}$ pound altogether. What does each box weigh?

$\frac{1}{24}$ pound

9. Mrs. Blackwell put $4\frac{2}{3}$ grams on the scale during a lab in science class. Then, she added $2\frac{5}{6}$ grams to the scale. How many grams are on the scale in all?

$7\frac{1}{2}$ grams

10. Stretch Your Thinking If you start with 1 and repeatedly multiply by $\frac{1}{2}$, will you reach 0? Explain why or why not.

No. Possible explanation: Each fraction has twice the denominator as the fraction preceding it: 1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, . . . The fraction will get closer and closer to zero without ever reaching zero.

4-1 Homework

Name _____ Date _____

Solve.

1. 40 × 2 = 80	**2.** 400 × 2 = 800	**3.** 400 × 20 = 8,000	**4.** 4,000 × 2 = 8,000
5. 80 × 60 = 4,800	**6.** 800 × 60 = 48,000	**7.** 800 × 6 = 4,800	**8.** 80 × 600 = 48,000
9. 70 × 20 = 1,400	**10.** 900 × 40 = 36,000	**11.** 800 × 70 = 56,000	**12.** 6,000 × 7 = 42,000

Solve. *Show your work.*

13. A tortoise walks 27 miles in a year. At this rate, how many miles will this tortoise walk in 10 years?

270 miles

14. If the tortoise lives to be 100 years old, how many miles will it walk during its lifetime?

2,700 miles

15. Every month, Paolo earns $40 for walking his neighbor's dog after school. How much does he earn from this job in one year?

$480

16. There are 60 seconds in a minute and 60 minutes in an hour. How many seconds are there in an hour?

3,600 seconds

17. An elephant eats about 2,500 pounds of food in 10 days. About how much food does an elephant eat in 1,000 days?

250,000 pounds

4-1 Name _____ Date _____

Remembering

Write the multiplier or divisor for each pair of equivalent fractions.

1. $\frac{4}{5} = \frac{12}{15}$
Multiplier = 3

2. $\frac{25}{60} = \frac{5}{12}$
Divisor = 5

3. $\frac{12}{20} = \frac{3}{5}$
Divisor = 4

4. $\frac{2}{3} = \frac{20}{30}$
Multiplier = 10

5. $\frac{27}{36} = \frac{3}{4}$
Divisor = 9

6. $\frac{1}{8} = \frac{7}{56}$
Multiplier = 7

Solve.

7. Jordan shoots 100 3-point shots per basketball practice. She makes 44 of these shots. What decimal represents the number of shots she makes?
0.44

8. At a county fair, 9 people out of 1,000 earned a perfect score in a carnival game. What decimal represents the number of people who earned a perfect score?
0.009

Solve.

9. $\frac{1}{6} \cdot 60 =$ 10

10. $\frac{1}{3} \cdot 21 =$ 7

11. $\frac{1}{9}$ of 81 = 9

12. $\frac{1}{3} \cdot 24 =$ 8

13. $\frac{1}{5}$ of 60 = 12

14. $\frac{1}{8} \cdot 16 =$ 2

15. Stretch Your Thinking Using a multiple of ten for at least one factor, write an equation with a product that has four zeros.
Possible answer: $5 \cdot 4{,}000 = 20{,}000$

Name _____ Date _____

Solve.

1. 60 × 40 = 2,400

2. 70 × 40 = 2,800

3. 700 × 60 = 42,000

4. 300 × 50 = 15,000

5. 40 × 50 = 2,000

6. 900 × 30 = 27,000

7. 400 × 80 = 32,000

8. 200 × 50 = 10,000

9. 300 × 200 = 60,000

The table shows the sizes of Farmer Reuben's fields. Use the table and a separate sheet of paper to help you answer each question.

 Corn Field	400 feet by 60 feet
 Wheat Field	700 feet by 200 feet
 Barley Field	200 feet by 200 feet

10. What is the area of the corn field?

400 × 60 = 24,000; 24,000 sq ft

11. What is the area of the wheat field?

700 × 200 = 140,000; 140,000 sq ft

12. What is the area of the barley field?

200 × 200 = 40,000; 40,000 sq ft

13. How many square feet of land did Farmer Reuben plant in all?

24,000 + 140,000 + 40,000 = 204,000; 204,000 sq ft

4-2 Name _____ Date _____

Remembering

Compare.

1. $\frac{5}{8}$ < $\frac{5}{7}$
2. $\frac{3}{4}$ < $\frac{5}{6}$
3. $\frac{9}{10}$ > $\frac{8}{9}$
4. $\frac{3}{8}$ < $\frac{5}{8}$
5. $\frac{1}{7}$ > $\frac{1}{8}$
6. $\frac{4}{5}$ > $\frac{4}{7}$

Multiply.

7. $\frac{5}{6} \cdot 36 =$ 30
8. $\frac{1}{8} \cdot 40 =$ 5
9. $\frac{2}{5} \cdot 60 =$ 24
10. $\frac{2}{3} \cdot 33 =$ 22
11. $\frac{3}{4} \cdot 36 =$ 27
12. $\frac{2}{9} \cdot 45 =$ 10

Solve.

13. 50 × 2 = 100
14. 500 × 2 = 1,000
15. 5,000 × 2 = 10,000
16. 60 × 40 = 2,400
17. 600 × 40 = 24,000
18. 600 × 4 = 2,400

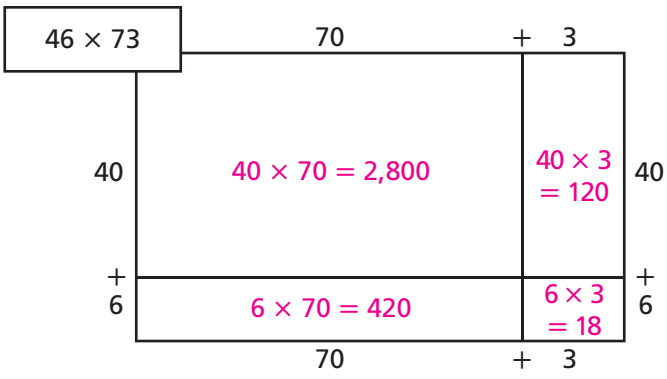
19. **Stretch Your Thinking** Explain how to predict the number of zeros in the product for the expression 600 · 500.

Possible answer: The product will have 5 zeros. Each factor has 2 zeros, which yields 4 zeros in the product. The product of 6 and 5 is 30, so an additional zero is in the product.

4-3 Homework Name Date

Solve the first problem with Place Value Sections.
Solve the other problems using any method you like.
Use a separate sheet of paper.

1.



2,800
120
420
+ 18
3,358

2. 84 × 19 = 1,596

3. 67 × 53 = 3,551

4. 91 × 28 = 2,548

Solve. *Show your work.*

5. Kamini needs to know the area of her yard so that she can buy the right amount of grass seed. The yard is 26 feet by 19 feet. What is the area of Kamini's yard in square feet?

494 sq ft

6. A restaurant has 16 crates of juice. Each crate holds 12 gallons of juice. How many gallons of juice are there altogether?

192 gallons

7. Mr. Jackson is taking 23 students to see a movie. Tickets for the movie cost 75 cents. How much money will Mr. Jackson spend on student tickets?

$17.25

8. There are usually 20 school days in a month. Grace has band practice for 60 minutes every day after school. How many minutes does she usually practice each month?

1,200 minutes

4-3 Name _____ Date _____

Remembering

Compare. Write > (greater than) or < (less than).

1. 0.7 (<) 0.71

2. 0.2 (>) 0.02

3. 0.76 (>) 0.68

4. 0.31 (<) 0.43

5. 0.21 (>) 0.12

6. 0.346 (<) 0.348

Estimate the sum or difference by rounding each mixed number to the nearest whole number. Then find the actual sum or difference.

7. $2\frac{1}{8} + 6\frac{6}{7}$

Estimate: 9

Sum: $8\frac{55}{56}$

8. $7\frac{9}{10} - 4\frac{1}{9}$

Estimate: 4

Difference: $3\frac{71}{90}$

9. $5\frac{7}{8} - 1\frac{1}{10}$

Estimate: 5

Difference: $4\frac{31}{40}$

10. $6\frac{3}{8} + 7\frac{2}{5}$

Estimate: 13

Sum: $13\frac{31}{40}$

Multiply.

11. 80 × 60 = 4,800

12. 200 × 30 = 6,000

13. 400 × 40 = 16,000

14. 600 × 50 = 30,000

15. 500 × 10 = 5,000

16. 300 × 90 = 27,000

17. Stretch Your Thinking Explain how to check multiplication using addition or division. Include an example in your explanation.

Possible answer: Use repeated addition or a fact family division equation to check multiplication. Example: $3 \cdot 7 = 21$; Check: $7 + 7 + 7 = 21$ or $21 \div 3 = 7$

4-4 Homework

Name _____ Date _____

Solve. Use any method.

1. 78 × 26 = 2,028

2. 93 × 42 = 3,906

3. 39 × 84 = 3,276

4. 56 × 71 = 3,976

The table shows how many newspapers are delivered each week by three paper carriers.
Use the table to answer the questions.
Use 1 year = 52 weeks.

Papers Delivered Each Week

Jameel	93
Clare	97
Mason	98

Show your work.

5. How many papers does Jameel deliver in a year?
4,836 papers

6. How many papers does Clare deliver in a year?
5,044 papers

7. How could you find how many papers Mason delivers in a year without doing any multiplication? What is the answer?
Answers will vary. Possible answer: Since Mason delivers one more paper each week than Clare, he will deliver 52 more papers in a year; 5,044 + 52 = 5,096.

Solve.

8. Ray needs to know the area of his floor so he can buy the right amount of carpet. The floor is 21 feet by 17 feet. What is the area of the floor?
357 sq ft

9. Maria is buying flowers. Each tray of flowers costs $24. If she buys 15 trays, what will the total cost be?
$360

Name _____ Date _____

Remembering

Copy each exercise. Then subtract.

1. 9,000 − 865 = 8,135 **2.** 105.66 − 98.53 = 7.13 **3.** 45,688 − 5.65 = 45,682.35

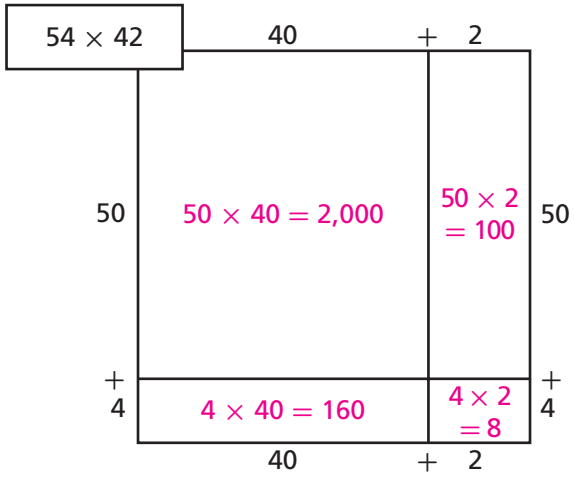
Multiply. You do not need to simplify.

4. $\frac{5}{7} \cdot \frac{1}{3} = \frac{5}{21}$ **5.** $\frac{3}{5} \cdot \frac{1}{5} = \frac{3}{25}$ **6.** $\frac{1}{5} \cdot \frac{2}{7} = \frac{2}{35}$

7. $\frac{2}{3} \cdot 5 = \frac{10}{3}$ **8.** $\frac{3}{4} \cdot \frac{3}{4} = \frac{9}{16}$ **9.** $\frac{1}{2} \cdot \frac{5}{9} = \frac{5}{18}$

Solve the first problem with Place-Value Sections. Solve the other problems using any method you like.

10.



2,000
100
160
\+ 8
2,268

11.
15
× 42
630

12.
65
× 81
5,265

13.
48
× 24
1,152

14. Stretch Your Thinking How is multiplying a 1-digit number and a 2-digit number the same as, and different from, multiplying two 2-digit numbers?

Possible answer: In both types of problems, the ones and the tens places of the 2-digit number is multiplied by the ones place of other factor. The difference between the two types is that when multiplying two 2-digit numbers, the ones place and the tens place of one factor is multiplied by the ones place and tens place of the other factor.

4-5 Homework

Name _____ Date _____

Multiply.

1. 397 × 9 = 3,573	**2.** 723 × 7 = 5,061	**3.** 4,188 × 3 = 12,564	**4.** 4,294 × 4 = 17,176
5. 67 × 82 = 5,494	**6.** 56 × 49 = 2,744	**7.** 36 × 29 = 1,044	**8.** 87 × 71 = 6,177
9. 28 × 27 = 756	**10.** 37 × 54 = 1,998	**11.** 63 × 91 = 5,733	**12.** 73 × 35 = 2,555
13. 46 × 83 = 3,818	**14.** 57 × 75 = 4,275	**15.** 94 × 47 = 4,418	**16.** 66 × 86 = 5,676

Solve.

17. Jamal is building a bed for his dog. The dimensions of the bed are 27 inches by 36 inches. What is the area of the bottom of the bed?

972 sq in.

18. Mr. Battle drives 9 miles to work every day. He works 5 days a week. How many miles does he travel to and from work over 52 weeks?

4,680 miles

4-5 Name _____ Date _____

Remembering

Add or subtract.

1. $3\frac{3}{4} + 2\frac{1}{8} = 5\frac{7}{8}$

2. $4\frac{1}{5} - 2\frac{3}{10} = 1\frac{9}{10}$

3. $5\frac{2}{5} + 3\frac{1}{3} = 8\frac{11}{15}$

4. $6\frac{5}{6} + 2\frac{5}{12} = 9\frac{1}{4}$

5. $10 - 2\frac{3}{5} = 7\frac{2}{5}$

6. $3\frac{2}{5} + 1\frac{1}{15} = 4\frac{7}{15}$

Find each product by first rewriting each mixed number as a fraction.

7. $\frac{2}{9} \cdot 2\frac{2}{3} =$ $\frac{2}{9} \cdot \frac{8}{3} = \frac{16}{27}$

8. $1\frac{3}{5} \cdot 10 =$ $\frac{8}{5} \cdot \frac{10}{1} = 16$

9. $4\frac{1}{4} \cdot 1\frac{1}{3} =$ $\frac{17}{4} \cdot \frac{4}{3} = \frac{17}{3} = 5\frac{2}{3}$

10. $2\frac{2}{5} \cdot \frac{3}{7} =$ $\frac{12}{5} \cdot \frac{3}{7} = \frac{36}{35} = 1\frac{1}{35}$

Solve. Use any method.

11. $64 \times 87 = 5{,}568$

12. $76 \times 35 = 2{,}660$

13. $53 \times 41 = 2{,}173$

14. $24 \times 72 = 1{,}728$

15. $19 \times 66 = 1{,}254$

16. $58 \times 36 = 2{,}088$

17. **Stretch Your Thinking** Explain how to use mental math to find the product of 64 and 25.

Possible answer: Multiply 64 by 100 and divide by 4.

Name _____ Date _____

Solve.

1. 0.9 × 7 = 6.3	**2.** 0.6 × 80 = 48.0	**3.** 0.04 × 9 = 0.36	**4.** 0.05 × 70 = 3.50	**5.** 0.16 × 7 = 1.12
6. 7.0 × 8 = 56.0	**7.** 0.09 × 30 = 2.70	**8.** 0.07 × 60 = 4.20	**9.** 0.17 × 81 = 13.77	**10.** 940 × 0.2 = 188.0
11. 3.43 × 7 = 24.01	**12.** 0.29 × 86 = 24.94	**13.** 0.15 × 196 = 29.40	**14.** 1.57 × 52 = 81.64	**15.** 2.03 × 121 = 245.63

Three runners started making a table for April to show how far they run every day, every week, and the entire month.

Show your work.

16. Finish the table for the runners.

Runner	Miles Per Day	Miles Per Week	Miles in April
Cedric	0.6	$7 \times 0.6 = 4.2$	$30 \times 0.6 = 18.0$
Shannon	2.4	$7 \times 2.4 = 16.8$	$30 \times 2.4 = 72.0$
Regina	1.75	$7 \times 1.75 = 12.25$	$30 \times 1.75 = 52.50$

17. Give the total miles in May for each runner below.

Cedric: 18.6 miles

Shannon: 74.4 miles

Regina: 54.25 miles

4-6 Name _____ Date _____

Remembering

Add.

1. $\frac{2}{7} + \frac{1}{5}$ — $\frac{17}{35}$

2. $\frac{1}{3} + \frac{2}{5}$ — $\frac{11}{15}$

3. $\frac{1}{3} + \frac{1}{8}$ — $\frac{11}{24}$

4. $\frac{1}{2} + \frac{1}{5}$ — $\frac{7}{10}$

5. $\frac{4}{5} + \frac{1}{6}$ — $\frac{29}{30}$

6. $\frac{5}{8} + \frac{1}{10}$ — $\frac{29}{40}$

Copy each exercise. Then add.

7. 46¢ + $3.48 = $3.94

8. 0.23 m + 0.54 m = 0.77 m

9. 33¢ + $11 = $11.33

Multiply.

10. 458 × 3 = 1,374

11. 893 × 6 = 5,358

12. 6,236 × 7 = 43,652

13. 6,982 × 5 = 34,910

14. **Stretch Your Thinking** Marissa bought four bottles of water. Each bottle of water was 95 cents. Write an equation with the same product as the total cost but different factors.

Possible answer: 5 · $0.76 = $3.80

4-7 Homework

Name _____ Date _____

Solve.

1. $0.3 \times 0.6 =$ 0.18

2. $0.4 \times 0.07 =$ 0.028

3. $0.03 \times 0.8 =$ 0.024

4. $5 \times 0.07 =$ 0.35

5. $0.02 \times 0.3 =$ 0.006

6. $0.05 \times 0.9 =$ 0.045

7.
$$\begin{array}{r} 1.8 \\ \times\ \ 6 \\ \hline 10.8 \end{array}$$

8.
$$\begin{array}{r} 0.23 \\ \times\ 40 \\ \hline 9.20 \end{array}$$

9.
$$\begin{array}{r} 0.14 \\ \times\ 0.9 \\ \hline 0.126 \end{array}$$

10.
$$\begin{array}{r} 0.36 \\ \times\ 0.8 \\ \hline 0.288 \end{array}$$

11.
$$\begin{array}{r} 1.4 \\ \times\ 0.5 \\ \hline 0.7 \end{array}$$

12.
$$\begin{array}{r} 0.32 \\ \times\ \ 51 \\ \hline 16.32 \end{array}$$

13.
$$\begin{array}{r} 0.6 \\ \times\ 0.14 \\ \hline 0.084 \end{array}$$

14.
$$\begin{array}{r} 2.6 \\ \times\ 0.9 \\ \hline 2.34 \end{array}$$

Solve using mental math.

15. $82 \times 0.01 =$ 0.82

16. $385 \times 0.1 =$ 38.5

17. $2{,}194 \times 0.01 =$ 21.94

Solve.

18. Simon sold bottles of water at the marathon on Saturday for $0.75 per bottle. He sold 43 bottles. How much money did he earn?

$32.25

19. Lauren has 9.9 meters of ribbon. She is cutting it into 100 equal pieces. That is the same as multiplying 9.9 by 0.01. How long will each piece of ribbon be?

0.099 meter

20. A furlong is a unit of measure used in horse racing. Every year, horses race 10 furlongs in the Kentucky Derby. One furlong is equal to 0.125 mile. How long is the Kentucky Derby in miles?

1.25 miles

4-7 Name _____ Date _____

Remembering

Use the Distributive Property to rewrite each problem so it has only two factors. Then solve.

1. $(7 \times 200) + (7 \times 800) =$ $7 \times (200 + 800) = 7 \times 1{,}000 = 7{,}000$

2. $(44 \times 3) + (56 \times 3) =$ $3 \times (44 + 56) = 3 \times 100 = 300$

Multiply. Simplify first if you can.

3. $\frac{5}{\cancel{8}_{4}} \cdot \frac{\cancel{6}^{3}}{7} =$ $\frac{15}{28}$

4. $\frac{1}{5} \cdot \frac{2}{9} =$ $\frac{2}{45}$

5. $\frac{1}{\cancel{2}_{1}} \cdot \frac{\cancel{4}^{2}}{9} =$ $\frac{2}{9}$

6. $\frac{\cancel{2}^{1}}{\cancel{3}_{1}} \cdot \frac{\cancel{15}^{5}}{\cancel{16}_{8}} =$ $\frac{5}{8}$

7. $\frac{1}{\cancel{8}_{4}} \cdot \frac{\cancel{6}^{3}}{7} =$ $\frac{3}{28}$

8. $\frac{\cancel{9}^{3}}{\cancel{10}_{2}} \cdot \frac{\cancel{5}^{1}}{\cancel{6}_{2}} =$ $\frac{3}{4}$

Solve.

9. $0.7 \times 6 =$ 4.2

10. $0.02 \times 60 =$ 1.2

11. $0.15 \times 34 =$ 5.1

12. $0.41 \times 66 =$ 27.06

13. $1.24 \times 6 =$ 7.44

14. $260 \times 0.3 =$ 78

15. **Stretch Your Thinking** Explain where to place the decimal point in the product for the expression $0.5 \cdot 0.03$.

Possible answer: $3 \cdot 5 = 15$. There is one decimal place in the first factor and two decimal places in the second factor. Move the decimal point 3 places to the left starting from the right of 15. The product is 0.015.

Name _____ Date _____

Solve.

1. 4.2 × 8.1 = 34.02

2. 9.4 × 6.3 = 59.22

3. 0.78 × 4.7 = 3.666

4. 0.05 × 3.7 = 0.185

5. 0.3 × 1.52 = 0.456

6. 0.80 × 3.8 = 3.040

7. 7.1 × 4.5 = 31.95

8. 2.4 × 0.64 = 1.536

9. 0.06 × 5.7 = 0.342

10. 9.9 × 6.6 = 65.34

11. 8.1 × 5.7 = 46.17

12. 0.07 × 24.3 = 1.701

Complete. Name the property used.

13. $(4.3 \times 6.2) - (\underline{4.3} \times 1.1) =$
$4.3 \times (6.2 - 1.1)$

Distributive Property

14. $8.9 \times (5.3 \times 3.4) =$
$(8.9 \times \underline{5.3}) \times 3.4$

Associative Property of Multiplication

Solve.

15. Lester's car can go 15.4 miles on 1 gallon of gas. How far can he go on 0.7 gallon?

10.78 miles

16. Clara wants to cover the top of her jewelry box. The top of the box is a rectangle with a length of 9.4 cm and a width of 8.3 cm. What is the total area she wants to cover?

78.02 sq cm

4-8 Name _____ Date _____

Remembering

Solve. Explain how you know your answer is reasonable. Show your work.

Explanations may vary.

1. A rectangular sand box has a length of $5\frac{1}{3}$ feet and a width of $3\frac{3}{4}$ feet. What is its perimeter?

Answer: $18\frac{1}{6}$ feet

Why is the answer reasonable?

Possible answer: $5\frac{1}{3}$ rounds to 5 and $3\frac{3}{4}$ rounds to 4; the perimeter should be close to 5 + 5 + 4 + 4 or 18 feet.

Solve. Show your work.

2. Kelly babysits for $5\frac{5}{6}$ hours on the weekend. This is $2\frac{1}{12}$ hours more than she babysits during the week. How many hours does she babysit during the week?

$3\frac{3}{4}$ hours

3. Lucas is making a recipe that requires $\frac{1}{4}$ cup of wheat flour and $1\frac{7}{8}$ cups of white flour. Altogether, how may cups of flour does the recipe require?

$2\frac{1}{8}$ cups

Solve.

4. $0.5 \times 0.4 =$ 0.2

5. $0.6 \times 0.09 =$ 0.054

6. $0.08 \times 0.3 =$ 0.024

7.
$$\begin{array}{r} 1.7 \\ \times\ 8 \\ \hline 13.6 \end{array}$$

8.
$$\begin{array}{r} 0.55 \\ \times\ 50 \\ \hline 27.5 \end{array}$$

9.
$$\begin{array}{r} 0.07 \\ \times\ 0.7 \\ \hline 0.049 \end{array}$$

10. Stretch Your Thinking Write a decimal equation that has a product of 3.15. (Do not use 1 as a factor.)

Possible answer: $6.3 \cdot 0.5 = 3.15$

Name _____ Date _____

Solve.

1. 4.8 × 100 = 480.0

2. 2.9 × 0.3 = 0.87

3. 0.56 × 20 = 11.20

4. 0.69 × 0.7 = 0.483

5. 2.6 × 3.4 = 8.84

6. 3.8 × 0.5 = 1.9

7. 1.5 × 4.9 = 7.35

8. 3.4 × 1.6 = 5.44

Complete the equations.

9. $0.7 \times 10^1 =$ 7
$0.7 \times 10^2 =$ 70
$0.7 \times 10^3 =$ 700

10. $0.98 \times 10^1 =$ 9.8
$0.98 \times 10^2 =$ 98
$0.98 \times 10^3 =$ 980

11. $5.63 \times 10^1 =$ 56.3
$5.63 \times 10^2 =$ 563
$5.63 \times 10^3 =$ 5,630

12. $3.7 \times 10^1 =$ 37
$3.7 \times 10^2 =$ 370
$3.7 \times$ 10^3 $= 3{,}700$

13. $2.04 \times 10^1 =$ 20.4
$2.04 \times$ 10^2 $= 204$
$2.04 \times 10^3 =$ 2,040

14. $0.42 \times$ 10^1 $= 4.2$
$0.42 \times 10^2 =$ 42
$0.42 \times 10^3 =$ 420

Solve.

Show your work.

15. The Sunrise Café gets tea bags in boxes of 1,000. If the café charges $1.75 for each cup of tea, and each cup of tea gets one tea bag, how much money does the café receive if they use a whole box of 1,000 teabags?

$1,750

16. If a box of tea bags costs $95, how much money does the café actually make after they have used up the box of tea and have paid for it?

$1,655

4-9 Name _____ Date _____

Remembering

Add or subtract.

1. $10 - 3\frac{3}{4}$

$6\frac{1}{4}$

2. $\frac{5}{8} + \frac{3}{8}$

1

3. $6\frac{4}{5} - 1\frac{1}{5}$

$5\frac{3}{5}$

4. $2\frac{1}{3} + 5\frac{1}{3}$

$7\frac{2}{3}$

5. $1\frac{2}{9} + 3\frac{5}{9}$

$4\frac{7}{9}$

6. $5\frac{1}{2} - \frac{1}{2}$

5

Copy each exercise. Then add or subtract.

7. $0.67 + 0.42 =$ 1.09

8. $7 - 3.2 =$ 3.8

9. $7.8 - 0.8 =$ 7

Solve.

10.
$$\begin{array}{r} 4.3 \\ \times\ 6.7 \\ \hline 28.81 \end{array}$$

11.
$$\begin{array}{r} 0.70 \\ \times\ 5.6 \\ \hline 3.92 \end{array}$$

12.
$$\begin{array}{r} 0.32 \\ \times\ 2.4 \\ \hline 0.768 \end{array}$$

13. Stretch Your Thinking Complete the equation $8.9 \cdot \square = 8{,}900$ using a power of ten. Explain how the product will change if the exponent changes.

10^3; Possible explanation: The exponent of a power of ten is equal to the number of places the decimal in the other factor is moved to generate the product. An exponent of 2 would produce a movement of 2 places to the right, or 890, and an exponent of 6 would produce a movement of 6 places to the right, or 8,900,000.

4-10 Homework

Name _____ Date _____

Round to the nearesth tenth.

1. 0.38 0.4 **2.** 0.94 0.9 **3.** 0.621 0.6 **4.** 0.087 0.1

Round to the nearest hundredth.

5. 0.285 0.29 **6.** 0.116 0.12 **7.** 0.709 0.71 **8.** 0.563 0.56

Write an estimated answer for each problem.
Then find and write each exact answer.

	Estimated Answer	Exact Answer
	Possible estimates given.	
9. $38 \times 92 \approx$	$40 \times 90 \approx 3{,}600$	$38 \times 92 = 3{,}496$
10. $8.1 \times 4.2 \approx$	$8 \times 4 \approx 32$	$8.1 \times 4.2 = 34.02$
11. $7.65 \times 0.9 \approx$	$8 \times 1 \approx 8$	$7.65 \times 0.9 = 6.885$
12. $3.8 \times 6.02 \approx$	$4 \times 6 \approx 24$	$3.8 \times 6.02 = 22.876$
13. $1.02 \times 0.9 \approx$	$1 \times 1 \approx 1$	$1.02 \times 0.9 = 0.918$

Solve. *Show your work.*

14. A factory makes 394 motorcycles each week. If there are 52 weeks in a year, how many motorcycles will the factory make in a year?

Estimate: about 20,000 motorcycles

Exact answer: 20,488 motorcycles

15. CDs are $15.25 each. How much will it cost to buy 3?

Estimate: about $45

Exact answer: $45.75

4-10 Name _____ Date _____

Remembering

Round to the nearest whole number.

1. 5.159 5

2. 12.7 13

3. 4.872 5

Round to the nearest tenth.

4. 45.461 45.5

5. 3.12 3.1

6. 77.039 77.0

Write an equation. Then solve. Equations may vary.

Show your work.

7. A rectangle has an area of 48 square feet and a length of 10 feet. What is its width?

$10 \cdot w = 48$; $4\frac{4}{5}$ or 4.8 feet

8. A length of string that is 22 feet long is being cut into pieces that are $\frac{1}{3}$ foot long. How many pieces will there be?

$x = 22 \div \frac{1}{3}$; 66 pieces

Solve.

9.
$$\begin{array}{r} 100 \\ \times\ 3.7 \\ \hline 370 \end{array}$$

10.
$$\begin{array}{r} 5.6 \\ \times\ 0.4 \\ \hline 2.24 \end{array}$$

11.
$$\begin{array}{r} 0.14 \\ \times\ 60 \\ \hline 8.4 \end{array}$$

12.
$$\begin{array}{r} 7.1 \\ \times\ 2.9 \\ \hline 20.59 \end{array}$$

13.
$$\begin{array}{r} 6.8 \\ \times\ 0.5 \\ \hline 3.4 \end{array}$$

14.
$$\begin{array}{r} 5.8 \\ \times\ 1.2 \\ \hline 6.96 \end{array}$$

15. Stretch Your Thinking Taylor estimated the music department would raise $1,100 for new uniforms by selling tickets to a performance next week. Each ticket will be $12.75. About how many tickets does the music department need to sell for Taylor's estimate to be reasonable?

Reasonable estimates range from 80 to 100 tickets.

4-11

Homework

Name _____ Date _____

Find each product.

1. 57 × 0.31 = 17.67

2. 0.29 × 74 = 21.46

3. 7.6 × 8.3 = 63.08

4. 0.35 × 94 = 32.90

5. 4.8 × 0.92 = 4.416

6. 6.5 × 0.81 = 5.265

7. 84 × 0.13 = 10.92

8. 0.9 × 0.04 = 0.036

Solve. Check that your answers are reasonable. *Show your work.*

9. Josefina is buying 10 pounds of salmon which costs $6.78 per pound. How much will the salmon cost?

$67.80

10. It is 9.2 miles between Mr. Rossi's place of work and his home. Because he comes home for lunch, he drives this distance 4 times a day. How far does Mr. Rossi drive each day?

36.8 miles

11. Mr. Rossi works 20 days a month. How far does he drive in a month?

736 miles

12. Gayle is saving to buy a bicycle. The bicycle costs $119.90. She has saved 0.7 of what she needs. How much has she saved so far?

$83.93

4-11 Name _____ Date _____

Remembering

Multiply.

1. $98 \cdot 15 =$ 1,470
2. $658 \cdot 7 =$ 4,606
3. $54 \cdot 7 =$ 378
4. $3{,}147 \cdot 4 =$ 12,588
5. $5{,}609 \cdot 2 =$ 11,218
6. $66 \cdot 75 =$ 4,950

Write your answers as fractions.

7. $\frac{2}{9} \cdot 5 =$ $\frac{10}{9}$
8. $\frac{3}{4} \cdot 9 =$ $\frac{27}{4}$
9. $\frac{2}{3} \cdot 7 =$ $\frac{14}{3}$
10. $\frac{7}{12} \cdot 15 =$ $\frac{105}{12}$
11. $\frac{5}{8} \cdot 3 =$ $\frac{15}{8}$
12. $\frac{5}{6} \cdot 9 =$ $\frac{45}{6}$

Round to the nearest tenth.

13. 0.43 0.4
14. 0.88 0.9
15. 0.076 0.1

Round to the nearest hundredth.

16. 0.456 = 0.46
17. 0.109 0.11
18. 0.541 = 0.54

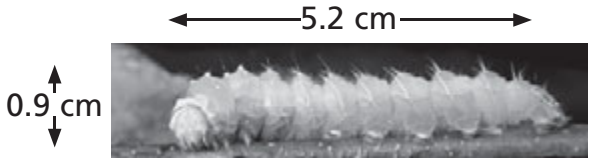
19. **Stretch Your Thinking** Write a multiplication word problem using decimals for both factors. Then solve your word problem.

Possible answer: Carrie uses 8.25 ounces of crushed walnuts for each pan of brownies she makes. If Carrie makes 5.5 pans of brownies, how many ounces of crushed walnuts will she use?

$8.25 \cdot 5.5 = 45.375$ or $45\frac{3}{8}$ ounces

Name Date

The life cycle of a butterfly has four stages. One stage is a caterpillar



Using the length and height of the caterpillar shown, use the descriptions below to draw the adult butterfly that develops from the caterpillar. Remember, a tenth of a centimeter is a millimeter.

- The length of your butterfly should be 3.6 times the height of the caterpillar. $3.6 \times 0.9 \text{ cm} = 3.24 \text{ cm}$
- The wingspan of your butterfly should be 1.75 times the length of the caterpillar. $1.75 \times 5.2 \text{ cm} = 9.1 \text{ cm}$

The completed drawings should measure approximately 1.3 inches from head to tail and approximately 3.5 inches from wingtip to wingtip. Accept any reasonably sized drawing.

4-12 Name _____ Date _____

Remembering

Write a decimal number for each word name.

1. six hundredths

0.06

2. fourteen and eight thousandths

14.008

3. nine thousandths

0.009

4. five tenths

0.5

Solve.

5. $\frac{1}{2} \div 10 =$ $\frac{1}{20}$

6. $\frac{1}{5} \cdot 4 =$ $\frac{4}{5}$

7. $12 \cdot \frac{1}{4} =$ 3

8. $\frac{1}{9} \div 3 =$ $\frac{1}{27}$

9. $\frac{2}{3} \cdot \frac{2}{5} =$ $\frac{4}{15}$

10. $3 \div \frac{1}{6} =$ 18

Find each product.

11.
$$\begin{array}{r} 0.48 \\ \times\ 23 \\ \hline 11.04 \end{array}$$

12.
$$\begin{array}{r} 0.35 \\ \times\ 13 \\ \hline 4.55 \end{array}$$

13.
$$\begin{array}{r} 0.86 \\ \times\ 91 \\ \hline 78.26 \end{array}$$

14.
$$\begin{array}{r} 0.37 \\ \times\ 6.5 \\ \hline 2.405 \end{array}$$

15.
$$\begin{array}{r} 0.22 \\ \times\ 76 \\ \hline 16.72 \end{array}$$

16.
$$\begin{array}{r} 5.4 \\ \times\ 3.2 \\ \hline 17.28 \end{array}$$

17. Stretch Your Thinking Sarah is stringing insect beads to make a bracelet. The butterfly bead is 0.45 inch long and the ladybug bead has a length of 0.27 inch. She uses each type of insect bead and places them end to end. How many of each type of bead does she use to make a line of insect beads measuring 1.71 inches?

2 butterfly beads and 3 ladybug beads

5-1 Homework

Name _____ Date _____

Complete each division. Check your answer.

1. $5\overline{)4{,}820}$ = 964

2. $8\overline{)7{,}548}$ = 943 R4

3. $9\overline{)7{,}535}$ = 837 R2

4. $3\overline{)2{,}958}$ = 986

5. $7\overline{)5{,}857}$ = 836 R5

6. $6\overline{)5{,}556}$ = 926

7. $7\overline{)6{,}945}$ = 992 R1

8. $8\overline{)5{,}624}$ = 703

9. $4\overline{)3{,}254}$ = 813 R2

Solve. Use estimation to check the solution. *Show your work.*

10. Mrs. Wong drove between Chicago and St. Louis 8 times last month. Altogether she drove 2,376 miles. How far is it from Chicago to St. Louis?

297 miles

11. Jay has 6,200 beads. He is making bracelets with 9 beads each. How many bracelets can he make? How many beads will be left?

688 bracelets; 8 beads left

12. There are 5,280 feet in a mile. There are 3 feet in a yard. How many yards are there in a mile?

1,760 yards

13. The Pencil Pal factory wraps pencils in packages of 6. Today there are 5,750 pencils to be packaged. How many packages will there be? How many pencils will be left over?

958 packages; 2 pencils left over

5-1 Name _____ Date _____

Remembering

Write each fraction as a decimal.

1. $\frac{2}{10}$ 0.2
2. $\frac{556}{1,000}$ 0.556
3. $\frac{6}{100}$ 0.06
4. $\frac{17}{100}$ 0.17
5. $\frac{23}{1,000}$ 0.023
6. $\frac{5}{1,000}$ 0.005
7. $\frac{1}{10}$ 0.1
8. $\frac{33}{100}$ 0.33
9. $\frac{85}{100}$ 0.85

Solve.

10. $400 \times 70 = 28{,}000$
11. $300 \times 30 = 9{,}000$
12. $700 \times 40 = 28{,}000$
13. $20 \times 50 = 1{,}000$
14. $900 \times 50 = 45{,}000$
15. $800 \times 30 = 24{,}000$

Solve. *Show your work.*

16. Sarah is dividing pies into eighths. She has 4 pies. How many eighths will she have?
    32 eighths

17. The track team plans to sprint 20 miles this school year. The runners will sprint $\frac{1}{4}$ mile each day. How many days will it take them to sprint 20 miles?
    80 days

18. **Stretch Your Thinking** Mrs. Thomas bought a bed for $1,548 and three armchairs. The bed cost 4 times as much as one armchair. How much did Mrs. Thomas spend altogether?
    $2,709

5-2 Homework

Name _____ Date _____

Divide.

1. $39\overline{)2{,}886}$ = 74

2. $81\overline{)7{,}533}$ = 93

3. $68\overline{)4{,}967}$ = 73 R3

4. $72\overline{)4{,}968}$ = 69

5. $28\overline{)2{,}520}$ = 90

6. $33\overline{)1{,}287}$ = 39

7. $46\overline{)1{,}426}$ = 31

8. $55\overline{)990}$ = 18

Solve.

Show your work.

9. The lunchroom has enough seats for 168 students. Each class has 24 students. How many classes can eat in the lunchroom at the same time?

7 classes

10. Mrs. Randall bought tickets to the art museum for all the fifth-grade students. Each ticket cost $12, and the total cost of the tickets was $1,152. How many fifth-grade students are there?

96 fifth-grade students

11. The Harmony Hotel has a total of 1,596 rooms. There are 42 rooms on each floor. How many floors does the Harmony Hotel have?

38 floors

12. This year Martin earned $1,615 mowing lawns, shoveling driveways, and doing yardwork. This is 19 times as much as he earned last year. How much did Martin earn last year?

$85

5-2 Name _____ Date _____

Remembering

Solve. Use any method. *Show your work.*

1. 68 × 21 = 1,428

2. 36 × 92 = 3,312

3. 25 × 44 = 1,100

Complete each division. Check your answer.

4. $5\overline{)1{,}267}$ = 253 R2

5. $3\overline{)1{,}374}$ = 458

6. $7\overline{)4{,}618}$ = 659 R5

7. Chloe sorts her beads. The number of red beads she has is $5\frac{5}{6}$ times the number of green beads. If she has 60 green beads, how many red beads does she have?

350 red beads

8. Brad plans to bike $15\frac{3}{4}$ miles. He has gone $\frac{2}{3}$ of the entire distance. How far has he gone?

$10\frac{1}{2}$ miles

9. Stretch Your Thinking Write and solve a division problem that divides a 4-digit number by a 2-digit number. How did you estimate the first digit of the quotient?

2,491 ÷ 53 = 47; Possible answer: Since 5 × 5 = 25 is too high, I used 4 as my first digit.

5-3 Homework

Name _____ Date _____

Divide.

1. 34)7,276 = 214

2. 85)6,120 = 72

3. 73)4,309 = 59 R2

4. 38)3,576 = 94 R4

5. 57)4,722 = 82 R48

6. 26)7,903 = 303 R25

7. 65)5,918 = 91 R3

8. 69)1,796 = 26 R2

Solve.

Show your work.

9. A carousel factory has 1,252 carousel horses. 48 horses are placed on each carousel. How many carousels can the factory build?

26 carousels

How many horses will be left over?

4 horses

10. Farmer Parson collected 1,183 chicken eggs this morning. He will put them in cartons that hold a dozen eggs each.

How many cartons will he fill?

98 cartons

How many eggs will be left over?

7 eggs

11. Write a division word problem using 7,903 and 26.

Answers will vary.

5-3 Name _____ Date _____

Remembering

Multiply. Simplify first if you can.

1. $\frac{3}{\cancel{4}_{1}} \cdot \frac{\cancel{12}^{3}}{13} =$ $\frac{9}{13}$

2. $\frac{1}{4} \cdot \frac{3}{7} =$ $\frac{3}{28}$

3. $\frac{7}{\cancel{8}_{2}} \cdot \frac{\cancel{4}^{1}}{5} =$ $\frac{7}{10}$

4. $\frac{\cancel{3}^{1}}{\cancel{8}_{2}} \cdot \frac{\cancel{4}^{1}}{\cancel{15}_{5}} =$ $\frac{1}{10}$

5. $\frac{\cancel{4}^{1}}{\cancel{5}_{1}} \cdot \frac{\cancel{10}^{2}}{\cancel{12}_{3}} =$ $\frac{2}{3}$

6. $\frac{1}{\cancel{5}_{1}} \cdot \frac{\cancel{5}^{1}}{6} =$ $\frac{1}{6}$

Complete the equations.

7. $0.65 \times 10^1 =$ 6.5
   $0.65 \times 10^2 =$ 65
   $0.65 \times 10^3 =$ 650

8. $0.8 \times 10^1 =$ 8
   $0.8 \times 10^2 =$ 80
   $0.8 \times 10^3 =$ 800

9. $2.45 \times 10^1 =$ 24.5
   $2.45 \times 10^2 =$ 245
   $2.45 \times 10^3 =$ 2,450

Divide.

10. $41\overline{)3{,}444}$ → 84

11. $36\overline{)1{,}944}$ → 54

12. $93\overline{)7{,}254}$ → 78

13. In Marla's school, $\frac{6}{15}$ of the students do not ride the bus to school. Of these students $\frac{5}{9}$ walk to school. What fraction of the students in Marla's school walk to school?

$\frac{2}{9}$

14. **Stretch Your Thinking** Ben starts with a certain number of fruit chew packages. He puts 27 packages into each of 85 cases. He has 3 packages left. How many packages of fruit chews did Ben start with? Explain how you know.

2,298 fruit chew packages; Possible explanation:

I multiplied 27 by 85 and then added 3.

5-4

Homework

Name _____ Date _____

Solve. Circle the choice that tells how you gave your answer.

Show your work.

1. A Ferris wheel holds 48 people. There are 823 people with tickets to ride the Ferris wheel. How many times will the Ferris wheel need to be run to give everyone a ride?

18 times

whole number only | (*round up*) | *mixed number* | *decimal* | *remainder only*

2. Bananas cost 89 cents each at the fruit stand. Isabel has $11.75. How many bananas can she buy?

13 bananas

(*whole number only*) | *round up* | *mixed number* | *decimal* | *remainder only*

3. The 15 members of a running club made $1,338 selling magazines. They will divide the money equally. How much should each runner get?

$89.20

whole number only | *round up* | *mixed number* | (*decimal*) | *remainder only*

4. There are 524 goldfish in the fish pond. They will be put in indoor tanks for the winter. If each tank holds 45 fish, how many tanks will be needed?

12 tanks

whole number only | (*round up*) | *mixed number* | *decimal* | *remainder only*

5. Mr. Lopez made 339 ounces of strawberry jam. He plans to divide the jam equally among his 12 cousins. How many ounces of jam will each cousin get?

$28\frac{1}{4}$ or 28.25 ounces

whole number only | *round up* | (*mixed number*) or (*decimal*) | *remainder only*

5-4 Name Date

Remembering

Compare. Write > (greater than) or < (less than).

1. 0.6 (>) 0.06

2. 0.4 (<) 0.41

3. 0.87 (>) 0.8

4. 0.67 (<) 0.76

5. 0.44 (>) 0.39

6. 0.657 (<) 0.668

Divide.

7. $66\overline{)5{,}745}$ 87 R3

8. $54\overline{)4{,}806}$ 89

9. $36\overline{)2{,}597}$ 72 R5

Solve.

Show your work.

10. Martin asked friends to buy raffle tickets. On Saturday, he sold tickets to 5 of the 12 friends he asked. On Sunday, he sold tickets to 7 of the 9 friends he asked. On which day did he sell tickets to the greater fraction of the friends he asked?

on Sunday

11. Emma bought $\frac{7}{8}$ yard of striped ribbon and $\frac{8}{9}$ yard of solid ribbon. Which kind of ribbon did she buy more of?

the solid ribbon

12. Stretch Your Thinking Write and solve a division word problem for which the remainder is the answer.

Possible answer: Coach Anderson wants to form 6 teams of 15 soccer players at soccer practice. If 94 soccer players come to soccer practice, how many players will not be on a team? 4 players

5-5

Homework

Name _____ Date _____

1. $7\overline{)3{,}990}$ = 570

2. $44\overline{)2{,}156}$ = 49

3. $5\overline{)7{,}003}$ = 1,400 R3

4. $28\overline{)1{,}763}$ = 62 R27

5. $54\overline{)4{,}458}$ = 82 R30

6. $6\overline{)3{,}039}$ = 506 R3

Solve.

Show your work.

7. This morning, a factory produced 6,000 cans of beans and packaged them in boxes of 48 cans. How many boxes were filled?

125 boxes

8. Six friends earned $645 for painting some rooms in a neighbor's house. If they divide the money equally, how much will each friend get?

$107.50

9. The floor of a ballroom has an area of 2,470 square feet. If the length of the floor is 65 feet, what is its width?

38 feet

10. Felipe just started collecting stamps. He has 36 stamps so far. His uncle Carlo has 1,890 stamps in his collection. The number of stamps Carlo has is how many times the number Felipe has?

$52\frac{1}{2}$ times

5-5 Name _____ Date _____

Remembering

Multiply.

1. 326 × 2 = 652	**2.** 575 × 5 = 2,875	**3.** 5,492 × 8 = 43,936	**4.** 4,512 × 9 = 40,608
5. 58 × 43 = 2,494	**6.** 79 × 52 = 4,108	**7.** 36 × 21 = 756	**8.** 89 × 67 = 5,963

Solve. Give your answer in simplest form.

9. $\frac{1}{8} \div 5 =$ $\frac{1}{40}$ **10.** $\frac{1}{4} \cdot 1\frac{2}{3} =$ $\frac{5}{12}$ **11.** $\frac{5}{6} - \frac{2}{3} =$ $\frac{1}{6}$

12. $6 \div \frac{1}{3} =$ 18 **13.** $\frac{5}{6} + \frac{5}{8} =$ $1\frac{11}{24}$ **14.** $6\frac{3}{4} \cdot \frac{1}{6} =$ $1\frac{1}{8}$

Solve. Circle the choice that tells how you gave your answer. Show your work.

15. A rollercoaster holds 45 people. There are 387 people waiting to board the rollercoaster. How many times will the rollercoaster need to run to give everyone a ride?

9 times

whole number only | (*round up*) | *mixed number* | *decimal* | *remainder only*

16. Stretch Your Thinking I am a number less than 3,000. When you divide me by 32, my remainder is 30. When you divide me by 58, my remainder is 44. What number am I?

2,654

5-6

Homework

Name _____ Date _____

Solve.

1. $9\overline{)6.57}$ = 0.73

2. $5\overline{)36.41}$ = 7.282

3. $4\overline{)9.584}$ = 2.396

4. $6\overline{)207.9}$ = 34.65

5. $23\overline{)153.87}$ = 6.69

6. $7\overline{)654.5}$ = 93.5

7. $45\overline{)431.1}$ = 9.58

8. $2\overline{)7.006}$ = 3.503

9. $16\overline{)5.76}$ = 0.36

Solve. *Show your work.*

10. Teresa bought 16 roses for $20.64. How much did she pay for each rose?

$1.29

11. Barry's dog Cubby is 1.26 meters long. Cubby is 7 times as long as Douglas's guinea pig Taffy. How long is Taffy?

0.18 m

12. Farmer Sanchez has 1,408.86 acres of land. He will divide it into 27 equal fields for spring planting. How many acres will be in each field?

52.18 acres

13. Six friends will stay at a cabin in the woods this weekend. The distance to the cabin is 148.5 miles. Each person will drive one sixth of the distance. How far will each person drive?

24.75 miles

5-6 Name Date

Remembering

Solve. Show your work.

1. Aiden buys a pair of jeans that costs $45.28. The sales tax that will be added to the cost of the jeans is $3.62. What is the total cost of the jeans?

$48.90

2. When Madison got her kitten, Fluffy, he weighed 787.37 grams. He now weighs 2,085.8 grams more than he did when Madison first brought him home. How much does Fluffy weigh now?

2,873.17 grams

Solve.

3. 150 × 0.6 = 90

4. 3.41 × 48 = 163.68

5. 2.28 × 5 = 11.4

6. 0.9 × 4 = 3.6

7. 0.45 × 86 = 38.7

8. 0.03 × 80 = 2.4

Divide.

9. $33\overline{)2{,}143}$ = 64 R31

10. $9\overline{)4{,}140}$ = 460

11. $4\overline{)6{,}403}$ = 1,600 R3

12. Stretch Your Thinking What part of this problem needs to be changed to make it correct? Explain how you know.

$46 \div 8 = 6.75$

Change the 6 in the ones place of the quotient to a 5. The solution is 5.75. Possible explanation: $8 \cdot 6 = 48$, not 46 or less.

5-7

Homework

Name _____ Date _____

Solve.

Show your work.

1. Nella and Lydia are hiking 15 miles today. After every 0.5 mile, they will stop and rest. How many times will they rest during the hike?

29 times

2. A cookie cutter shark is 0.4 meter long, and a thresher shark is 6 meters long. How many times as long as the cookie cutter shark is the thresher shark?

15 times

3. At a large wedding, the cakes were cut into hundredths, so each piece was 0.01 of a whole cake. If there were 12 cakes, how many pieces were there?

1,200 pieces

4. A millimeter is 0.001 of a meter. How many millimeters are there in 7 meters?

7,000 millimeters

5. Paco saves $0.75 each day for a new bicycle helmet. He has saved $36. For how many days has Paco been saving?

48 days

Solve.

6. $0.9\overline{)63}$ = 70

7. $0.08\overline{)72}$ = 900

8. $0.007\overline{)42}$ = 6,000

9. $0.6\overline{)420}$ = 700

10. $0.4\overline{)372}$ = 930

11. $0.6\overline{)534}$ = 890

12. $0.26\overline{)884}$ = 3,400

13. $0.71\overline{)1,136}$ = 1,600

5-7 Name _____ Date _____

Remembering

Solve. *Show your work.*

1. Tyler is making a history project and needs two poster boards. He cuts one to measure 42.25 inches in length. He cuts the second to measure 34.75 inches in length. What is the difference between the two lengths of poster board?

7.5 inches

2. Ella has $2,251.88 in her bank account. She withdraws $852. How much money is left in her bank account?

$1,399.88

Solve.

3. $0.05 \times 0.4 = 0.02$

4. $2.5 \times 5 = 12.5$

5. $0.32 \times 70 = 22.4$

6. $0.2 \times 0.8 = 0.16$

7. $0.09 \times 0.4 = 0.036$

8. $0.6 \times 0.09 = 0.054$

Solve.

9. $5\overline{)17.4} = 3.48$

10. $6\overline{)416.46} = 69.41$

11. $7\overline{)32.55} = 4.65$

12. Stretch Your Thinking Look at the division problem $112 \div 0.056$. Without solving, how many zeros will be in the quotient? How do you know?

3 zeros; Possible answer: There are 3 decimal places in the divisor and 0 decimal places in the dividend, so there will be 3 zeros in the quotient.

5-8

Homework

Name _____ Date _____

Divide.

1. $0.07\overline{)4.2}$ = 60

2. $0.8\overline{)2.4}$ = 3

3. $0.05\overline{)4.8}$ = 96

4. $0.24\overline{)2.064}$ = 8.6

5. Circle the division that does *not* have the same answer as the others.

54 ÷ 6 5.4 ÷ 0.6 (0.54 ÷ 0.6) 0.54 ÷ 0.06 0.054 ÷ 0.006

Solve. *Show your work.*

6. A beekeeper collected 7.6 liters of honey. She will pour it into bottles that each hold 0.95 liter. How many bottles will she fill?

8 bottles

7. A very small dinosaur, the microraptor, was only 1.3 feet long. One of the largest dinosaurs, the diplodocus, was about 91 feet long. How many times as long as the microraptor was the diplodocus?

70 times

8. Tomorrow, in the town of Eastwood, there will be a big race. The course is 5.25 kilometers long. A water station will be set up every 0.75 kilometer, including at the finish line. How many water stations will there be?

7 water stations

9. Marisol's bedroom has an area of 29.76 square meters. The length of the room is 6.2 meters. What is its width?

4.8 meters

5-8 Name _____ Date _____

Remembering

Round to the nearest tenth.

1. 1.28 1.3

2. 14.21 14.2

3. 8.148 8.1

Round to the nearest hundredth.

4. 4.769 4.77

5. 45.124 45.12

6. 16.107 16.11

Solve.

7. 7.7 × 1.4 = 10.78

8. 3.1 × 0.05 = 0.155

9. 5.79 × 0.9 = 5.211

10. 3.4 × 8.8 = 29.92

11. 3.5 × 0.46 = 1.61

12. 8.6 × 0.90 = 7.74

Solve.

13. $0.9\overline{)36}$ = 40

14. $0.006\overline{)48}$ = 8,000

15. $0.04\overline{)32}$ = 800

16. $0.7\overline{)364}$ = 520

17. $0.34\overline{)2,210}$ = 6,500

18. $0.83\overline{)1,494}$ = 1,800

19. Stretch Your Thinking Must a decimal divisor and a decimal dividend have the same number of decimal places in order to have a whole-number quotient? Write a division equation using two decimal numbers to support your answer.

No; Possible answer: 4.8 ÷ 0.05 = 96

5-9

Homework

Name _____ Date _____

Divide.

1. $0.7\overline{)35}$ = 50

2. $0.06\overline{)24}$ = 400

3. $0.8\overline{)0.64}$ = 0.8

4. $0.03\overline{)18}$ = 600

5. $3\overline{)33}$ = 11

6. $0.05\overline{)0.65}$ = 13

7. $12\overline{)72}$ = 6

8. $0.04\overline{)11.56}$ = 289

9. $8\overline{)216}$ = 27

10. $0.8\overline{)490.4}$ = 613

11. $28\overline{)2,380}$ = 85

12. $0.033\overline{)5.148}$ = 156

Solve. Explain how you know your answer is reasonable. *Show your work.*

Explanations will vary.

13. Georgia works as a florist. She has 93 roses to arrange in vases. Each vase holds 6 roses. How many roses will Georgia have left over?

3 roses

14. Julia is jarring peaches. She has 25.5 cups of peaches. Each jar holds 3 cups. How many jars will Julia need to hold all the peaches?

9 jars

15. The area of a room is 114 square feet. The length of the room is 9.5 feet. What is the width of the room?

12 feet

5-9 Name _____ Date _____

Remembering

Add or subtract.

1. $1\frac{1}{2} + 5\frac{5}{6} = 7\frac{1}{3}$

2. $2\frac{3}{5} + 5\frac{3}{10} = 7\frac{9}{10}$

3. $1\frac{1}{3} - \frac{1}{6} = 1\frac{1}{6}$

4. $7\frac{3}{10} + 2\frac{1}{5} = 9\frac{1}{2}$

5. $9\frac{1}{8} - 2\frac{3}{4} = 6\frac{3}{8}$

6. $12 - 5\frac{2}{3} = 6\frac{1}{3}$

Find each product.

7. $7.8 \times 1.2 = 9.36$

8. $3.3 \times 0.67 = 2.211$

9. $91 \times 0.49 = 44.59$

10. $0.25 \times 72 = 18$

11. $68 \times 0.17 = 11.56$

12. $0.76 \times 28 = 21.28$

Divide.

13. $0.08\overline{)6.4}$ = 80

14. $0.8\overline{)7.2}$ = 9

15. $0.07\overline{)5.67}$ = 81

16. $0.58\overline{)5.336}$ = 9.2

17. $0.9\overline{)6.3}$ = 7

18. $0.05\overline{)1.75}$ = 35

19. **Stretch Your Thinking** Write a real world division problem for which you would drop the remainder.

Possible answer: Dante is filling boxes with 36 water bottles. There are 1,641 water bottles. How many full boxes will Dante fill? 45

5-10 Homework

Name _____ Date _____

Multiply or divide.

1. $1.5 \times 5 =$ 7.5

2. $0.4 \times 0.05 =$ 0.02

3. $0.004 \times 0.03 =$ 0.00012

4.
$$\begin{array}{r} 0.55 \\ \times\ 0.07 \\ \hline 0.0385 \end{array}$$

5.
$$\begin{array}{r} 0.25 \\ \times\ 0.12 \\ \hline 0.03 \end{array}$$

6.
$$\begin{array}{r} 22.3 \\ \times\ 6.2 \\ \hline 138.26 \end{array}$$

7.
$$\begin{array}{r} 20.8 \\ \times\ 0.26 \\ \hline 5.408 \end{array}$$

8. $0.3\overline{)0.108}$ = 0.36

9. $0.11\overline{)407}$ = 3,700

10. $0.67\overline{)32.16}$ = 48

11. $0.44\overline{)105.6}$ = 240

For each problem, decide whether you need to multiply or divide. Then solve. Explain how you know your answer is reasonable. Explanations will vary.

Show your work.

12. Harriet makes yo-yos. She needs 38 inches of string for each yo-yo. How many yo-yos can she make with 875 inches of string? How many inches of string will be left over?

divide; 23 yo-yos; 1 inch of string left over

13. Roberto will save $\frac{1}{6}$ of his allowance each day. If he gets $2.00 a day, about how much money will he save each day? Round your answer to the nearest penny.

multiply; $0.33

14. Raisins cost $0.97 per pound. Michael bought $15.52 worth of raisins. How many pounds of raisins did he buy?

divide; 16 pounds

5-10 Name _____ Date _____

Remembering

Multiply.

1. 47 × 7 = 329

2. 181 × 3 = 543

3. 4,609 × 5 = 23,045

4. 2,115 × 6 = 12,690

5. 86 × 75 = 6,450

6. 22 × 15 = 330

7. 53 × 25 = 1,325

8. 38 × 36 = 1,368

Divide.

9. $0.06\overline{)24}$ = 400

10. $0.3\overline{)228.6}$ = 762

11. $0.08\overline{)28.4}$ = 355

Tell whether you need to multiply or divide. Then solve. *Show your work.*

12. A rectangle has an area of 4 square meters. The width is $\frac{1}{5}$ meter. What is the length of the rectangle?

Divide; 20 meters

13. Audubon Preschool has 154 children in one age group. One seventh of those children arrive for early morning drop off. How many children arrive for early morning drop off?

Multiply; 22 children

14. Stretch Your Thinking Write a division word problem that requires dividing two decimals to solve. Write a multiplication equation to check your answer.

Possible answer: The area of Theresa's room is 110.36 square feet. The width of the room is 8.9 feet. What is the length of the room? 12.4 feet; $12.4 \times 8.9 = 110.36$

5-11 Homework

Name _____ Date _____

Dividing numbers involves dividends, divisors, and quotients.

$$\text{divisor}\overline{)\text{dividend}}\quad \text{quotient}$$

Write a division problem (including the quotient) that satisfies all three statements. Sample answers shown.

Show your work.

1. The dividend is a one-digit whole number.
The divisor is a one-digit whole number.
The quotient is a one-digit whole number.

$$2\overline{)6}\quad 3$$

2. The dividend is a two-digit whole number.
The divisor is a one-digit whole number.
The quotient is a one-digit whole number.

$$3\overline{)21}\quad 7$$

3. The dividend is a two-digit whole number.
The divisor is less than 1, and a number in tenths.
The quotient is a two-digit whole number.

$$0.4\overline{)36}\quad 90$$

4. The dividend is a two-digit whole number.
The divisor is greater than 1, and a number in tenths.
The quotient is a two-digit whole number.

$$1.6\overline{)32}\quad 20$$

5. The dividend is a number in tenths.
The divisor is a one-digit whole number.
The quotient is a number in tenths.

$$3\overline{)0.9}\quad 0.3$$

6. The dividend is a decimal in hundredths.
The divisor is a decimal in hundredths.
The quotient is a one-digit whole number.

$$0.12\overline{)0.24}\quad 2$$

7. The dividend is a decimal in hundredths.
The divisor is a decimal in hundredths.
The quotient is a two-digit whole number.

$$0.02\overline{)0.42}\quad 21$$

5-11 Name _____ Date _____

Remembering

Add or subtract.

1. $21 + 1.08 =$ 22.08

2. $0.62 + 0.49 =$ 1.11

3. $0.06 + 0.5 =$ 0.56

4. $6 - 0.09 =$ 5.91

5. $3.01 - 0.8 =$ 2.21

6. $12.05 - 8 =$ 4.05

Complete each fraction box.

7.

$\frac{1}{3}$ and $\frac{4}{9}$	
$>$	$\frac{4}{9} > \frac{1}{3}$ or $\frac{4}{9} > \frac{3}{9}$
$+$	$\frac{4}{9} + \frac{1}{3} = \frac{4}{9} + \frac{3}{9} = \frac{7}{9}$
$-$	$\frac{4}{9} - \frac{1}{3} = \frac{4}{9} - \frac{3}{9} = \frac{1}{9}$
$\cdot$	$\frac{4}{9} \cdot \frac{1}{3} = \frac{4}{27}$

8.

$\frac{2}{7}$ and $\frac{1}{4}$	
$>$	$\frac{2}{7} > \frac{1}{4}$ or $\frac{8}{28} > \frac{7}{28}$
$+$	$\frac{2}{7} + \frac{1}{4} = \frac{8}{28} + \frac{7}{28} = \frac{15}{28}$
$-$	$\frac{2}{7} - \frac{1}{4} = \frac{8}{28} - \frac{7}{28} = \frac{1}{28}$
$\cdot$	$\frac{2}{7} \cdot \frac{1}{4} = \frac{2}{28} = \frac{1}{14}$

Multiply or divide.

9.
$$\begin{array}{r} 37.5 \\ \times\ 3.5 \\ \hline 131.25 \end{array}$$

10.
$$\begin{array}{r} 0.63 \\ \times\ 0.27 \\ \hline 0.1701 \end{array}$$

11. $0.93\overline{)567.3}$ = 610

12. Stretch Your Thinking Use the term *dividend*, *divisor*, or *quotient* to complete each sentence. Then write a division equation that fits the description.

The dividend is a decimal in thousandths.

The quotient is a decimal in thousandths.

The divisor is a two-digit whole number.

Division problem: $1.564 \div 34 = 0.046$

6-1

Homework

Name _____ Date _____

Write an equation and use it to solve the problem.
Draw a model if you need to.

Equations may vary.

Show your work.

1. Two professional baseball teams played a four-game series. Attendance for the first three games was 126,503 people, What was the Game 4 attendance if 171,318 people altogether attended the series?

44,815 people; $126{,}503 + n = 171{,}318$; $n = 171{,}318 - 126{,}503$

2. In the past, shares of stock were bought and sold in fractions of a dollar. Suppose one share of stock, purchased for $72\frac{1}{4}$ dollars per share, decreased in value to $66\frac{3}{8}$ dollars per share. What was the decrease in value per share?

$5\frac{7}{8}$ dollars; $72\frac{1}{4} - 66\frac{3}{8} = n$

3. Two shipping containers are being loaded into the cargo hold of a ship. One container weighs 2.3 tons. What is the weight of the other container if the total weight of both containers is 4.15 tons?

1.85 tons; $2.3 + n = 4.15$; $n = 4.15 - 2.3$

4. The heights of horses are often measured in units called hands. Abigail's pony is $13\frac{1}{4}$ hands tall. How much taller is Jermaine's horse if it is $16\frac{1}{2}$ hands tall?

$3\frac{1}{4}$ hands; $13\frac{1}{4} + n = 16\frac{1}{2}$; $n = 16\frac{1}{2} - 13\frac{1}{4}$

5. Jake plays baseball with two wooden bats—one made from hickory and one made from white ash. What is the weight of his white ash bat if his hickory bat weighs 32.4 ounces, and both bats together weigh 64.33 ounces?

31.93 ounces; $n + 32.4 = 64.33$; $n = 64.33 - 32.4$

6. Seventeen fewer people attended the second basketball game of the season than attended the first game. One hundred ninety-two people attended the second game. How many people attended the first game?

209 people; $n - 17 = 192$; $n = 192 + 17$

6-1 Name _____ Date _____

Remembering

Add or subtract.

1. $4\frac{1}{8} + 1\frac{5}{8} =$

   $5\frac{6}{8}$ or $5\frac{3}{4}$

2. $4\frac{3}{5} + 6\frac{1}{5} =$

   $10\frac{4}{5}$

3. $6\frac{2}{3} - 5\frac{1}{3} =$

   $1\frac{1}{3}$

4. $7 - 1\frac{1}{2} =$

   $5\frac{1}{2}$

5. $8\frac{3}{4} - 2\frac{3}{4} =$

   6

6. $\frac{2}{7} + \frac{4}{7} =$

   $\frac{6}{7}$

7. $15 - 3\frac{1}{7} =$

   $11\frac{6}{7}$

8. $5\frac{4}{5} + 1\frac{1}{8} =$

   $6\frac{37}{40}$

9. $11\frac{1}{5} - 9\frac{3}{4} =$

   $1\frac{9}{20}$

10. $1\frac{5}{6} + \frac{1}{3} =$

    $2\frac{1}{6}$

11. $2\frac{2}{3} + 7\frac{5}{9} =$

    $10\frac{2}{9}$

12. $6\frac{3}{7} + 1\frac{1}{14} =$

    $7\frac{7}{14}$ or $7\frac{1}{2}$

Copy each exercise. Then subtract.

13. $12{,}389 - 2.75 =$

    12,386.25

14. $165.98 - 127.2 =$

    38.78

15. $326.55 - 23.81 =$

    302.74

16. **Stretch Your Thinking** Garrett wants to buy a new soccer ball, a pair of shorts, and a pair of soccer shoes. The ball costs $12.55, the shorts cost $22.98, and the shoes cost $54.35. Garrett has $85.00. How much more money does Garrett need? Write an equation to solve the problem.

    Possible equation: $\$85.00 + n = \$12.55 + \$22.98 + \$54.35$; Garrett needs $4.88.

6-2

Homework

Name _____ Date _____

Solve each problem. Draw a model if you need to.

Equations and models may vary.

Show your work.

1. Spectators for a high school football game sit in bleachers along one side of the field. Altogether, the bleachers seat 1,152 spectators in 16 rows of equal length. How many spectators can be seated in one row of the bleachers?

72 spectators; $n = 1{,}152 \div 16$

2. How many periods of time, each $\frac{1}{3}$ of an hour long, does a 8-hour period of time represent?

24 periods; $n = 8 \div \frac{1}{3}$

3. The area of a rectangular ceiling is 130.5 square feet, and one measure of the ceiling is 14.5 feet. What is the other measure of the ceiling?

9 feet; $n = 130.5 \div 14.5$

4. Sorbet is a frozen dessert that is often made from fruit. How many portions, each weighing $\frac{1}{10}$ of a kilogram, can a French dessert chef create from 3 kilograms of sorbet?

30 servings; $n = 3 \div \frac{1}{10}$

5. The family room floor in Zack's home has a rectangular area rug that measures 6.5 feet by 9 feet. The floor is rectangular and measures 10 feet by 12 feet. What area of the floor is not covered by the rug?

61.5 square feet; $n = (10 \cdot 12) - (9 \cdot 6.5)$

6. A cargo van is carrying 20 identical steel cylinders. Each cylinder contains compressed oxygen. Altogether, the cylinders weigh $\frac{1}{2}$ of a ton.

a. In tons, what is the weight of each cylinder?

$\frac{1}{40}$ ton; $n = \frac{1}{2} \div 20$

b. One ton = 2,000 pounds. In pounds, what is the weight of each cylinder?

50 pounds; $n = 2{,}000 \cdot \frac{1}{40}$

6-2 Name _____ Date _____

Remembering

Multiply.

1. $\frac{6}{7} \cdot 42 =$ 36
2. $\frac{1}{3} \cdot 36 =$ 12
3. $\frac{4}{5} \cdot 15 =$ 12
4. $\frac{1}{4} \cdot 28 =$ 7
5. $\frac{5}{9} \cdot 81 =$ 45
6. $\frac{3}{8} \cdot 72 =$ 27

Write an equation. Then solve. Equations may vary. *Show your work.*

7. There is $\frac{1}{4}$ of a peach pie left after a family picnic. Four cousins share the leftover pie equally. What fraction of a whole pie will each cousin receive?
   $x = \frac{1}{4} \div 4$; $\frac{1}{16}$ of a pie

8. Tully has 24 stamps in his collection. This is $\frac{1}{3}$ times the number Jordan has. How many stamps does Jordan have?
   $\frac{1}{3} \cdot j = 24$; 72 stamps

Write an equation to solve the problem. Draw a model if you need to. Equations may vary.

9. Candace jumped 11.45 feet in a long jump competition. What is the length of Maria's jump if she jumped 1.05 fewer feet than Candace?
   $11.45 - 1.05 = n$; 10.40 or 10.4 feet

10. **Stretch Your Thinking** Ms. Jackson has $97.00 to spend on games for her classroom. She buys six board games that cost $11.95 each and a video game that costs $24.10. How much money does Ms. Jackson have left to buy more games? Write an equation to solve the problem.
    $\$97.00 - (6 \times \$11.95 + \$24.10) = \$1.20$;
    Ms. Jackson has $1.20 left.

6-3

Homework

Name _____ Date _____

Write a word problem for the equation.
Draw a model to show the product.

Show your work.

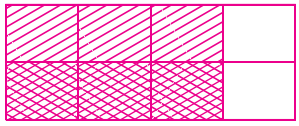
Sample contexts and models shown.

1. $\frac{2}{3} \cdot 3 = \frac{6}{3}$

A recipe calls for $\frac{2}{3}$ cup of bran. To make 3 times as many servings, $\frac{6}{3}$ cups of bran are needed.

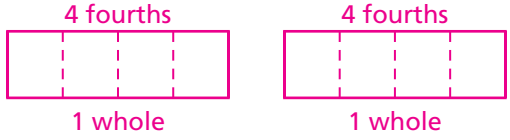
2. $\frac{3}{4} \cdot \frac{1}{2} = \frac{3}{8}$

Three-fourths of the students in a class play on a sports team. Of those students, $\frac{1}{2}$ play on the soccer team. Altogether, $\frac{3}{8}$ of the students in the class play on the soccer team.



3. $2 \div \frac{1}{4} = 8$

Two whole grapefruit, each cut into quarters, will create 8 grapefruit quarters.



6-3 Name _____ Date _____

Remembering

Complete each fraction box.

1.

$\frac{3}{4}$ and $\frac{5}{6}$	
>	$\frac{5}{6} > \frac{3}{4}$ or $\frac{10}{12} > \frac{9}{12}$
+	$\frac{5}{6} + \frac{3}{4} = \frac{10}{12} + \frac{9}{12} = \frac{19}{12} = 1\frac{7}{12}$
−	$\frac{5}{6} - \frac{3}{4} = \frac{10}{12} - \frac{9}{12} = \frac{1}{12}$
·	$\frac{5}{6} \cdot \frac{3}{4} = \frac{15}{24} = \frac{5}{8}$

2.

$\frac{3}{5}$ and $\frac{8}{15}$	
>	$\frac{3}{5} > \frac{8}{15}$ or $\frac{9}{15} > \frac{8}{15}$
+	$\frac{3}{5} + \frac{8}{15} = \frac{9}{15} + \frac{8}{15} = \frac{17}{15} = 1\frac{2}{15}$
−	$\frac{3}{5} - \frac{8}{15} = \frac{9}{15} - \frac{8}{15} = \frac{1}{15}$
·	$\frac{3}{5} \cdot \frac{8}{15} = \frac{24}{75} = \frac{8}{25}$

Solve. *Show your work.*

3. A $1,508 award is shared equally by 8 people. What is each person's share of the award?

$188.50

4. Felipe has 54 coins in his collection. His brother Pedro has 1,269 coins. The number of coins Pedro has is how many times the number his brother has?

23.5 or $23\frac{1}{2}$ times

Write an equation to solve the problem. Draw a model if you need to. Equations and models may vary.

5. How many periods of time, each $\frac{1}{6}$ of an hour long, does a 10-hour period of time represent?

$n = 10 \div \frac{1}{6}$; 60 periods

6. Stretch Your Thinking Write a word problem for the following equation. $\frac{4}{5} \cdot \frac{1}{4} + \frac{3}{5} = \frac{4}{5}$ Possible answer:

One-fourth of the $\frac{4}{5}$ mile route Ken walks each weekday is in a park. On Saturday, he walked an additional $\frac{3}{5}$ mile in the park. How far did Ken walk in the park on Saturday?

$\frac{4}{5}$ mile

6-4 Homework

Name _____ Date _____

Write an equation to solve the problem. Use mental math or estimation to show that your answer is reasonable.

Equations and estimates may vary.

Show your work.

1. In a speed test, a computer took 12.4 seconds to complete one task, and 37.8 seconds to complete a more difficult task. How much time was needed to complete both tasks?

Equation: 50.2 seconds; $12.4 + 37.8 = n$

Estimate: Round 12.4 to 10 and 37.8 to 40, then add. My answer is reasonable because my estimate is $10 + 40$ or about 50 seconds.

2. To walk to school, Pablo first walks $\frac{1}{2}$ kilometer to Tanya's house. Then Pablo and Tanya walk $\frac{3}{5}$ kilometer to school. How far does Pablo walk to school?

Equation: $1\frac{1}{10}$ km; $n = \frac{1}{2} + \frac{3}{5}$

Estimate: $\frac{3}{5}$ is greater than $\frac{1}{2}$. My answer is reasonable because the sum of $\frac{1}{2}$ and a fraction greater than $\frac{1}{2}$ is greater than 1.

3. Each Saturday morning, Andy works 4 hours and earns $34. At that rate, what does Andy earn for each hour he works?

Equation: \$8.50; $34 \div 4 = n$

Estimate: Andy earns between \$8 and \$9 per hour because $4 \times 8 = 32$ and $4 \times 9 = 36$.

4. Yuri completed a race in 0.88 fewer seconds than Josie. Josie's time was 23.95 seconds. How long did it take Yuri to complete the race?

Equation: 23.07 seconds; $23.95 - 0.88 = n$

Estimate: Round 23.95 to 24 and round 0.88 to 1. My answer is reasonable because my estimate is $24 - 1$ or about 23 seconds.

6-4 Name Date

Remembering

Write an estimated answer for each problem. Then find and write each exact answer. Estimates may vary.

	Estimated Answer	Exact Answer
1. $41 \times 77 \approx$	$40 \times 80 \approx 3{,}200$	$41 \times 77 = 3{,}157$
2. $3.8 \times 1.9 \approx$	$4 \times 2 \approx 8$	$3.8 \times 1.9 = 7.22$
3. $7.3 \times 5.01 \approx$	$7 \times 5 \approx 35$	$7.3 \times 5.01 = 36.573$

Divide.

4. $45\overline{)6{,}733}$ 149 R28

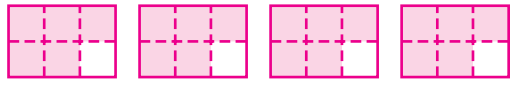
5. $61\overline{)7{,}892}$ 129 R23

6. $28\overline{)3{,}123}$ 111 R15

Write a word problem for the equation. Draw a model to show the product. Sample context and model are shown.

7. $\frac{5}{6} \cdot 4 = \frac{20}{6}$

A recipe calls for $\frac{5}{6}$ of a cup of flour. To make 4 times the number of servings, $\frac{20}{6}$ cups are needed.



8. Stretch Your Thinking Kaley has $2\frac{3}{8}$ yards of fabric. She cuts and uses $1\frac{1}{16}$ yards from the fabric. She estimates that less than 1 yard of fabric is left over. Is her estimate reasonable? Explain.

No. Possible explanation: Using benchmarks, $2\frac{3}{8}$ rounds to $2\frac{1}{2}$ and $1\frac{1}{16}$ rounds to 1; $2\frac{1}{2} - 1 = 1\frac{1}{2}$

6-5

Homework

Name _____ Date _____

Solve each problem.

Show your work.

1. Michael has 21 T-shirts. One third of them are blue. How many of Michael's T-shirts are blue?

   7 T-shirts

2. There are 476,092 fish in the city aquarium. That number of fish is 476,070 more fish than Nadia has in her aquarium. How many fish does Nadia have in her aquarium?

   22 fish

3. Anne-Marie has saved 9 dollars for a new coat. That is $\frac{1}{6}$ as much money as she needs. How much does the coat cost?

   $54

4. Last year it rained on 63 days in Mudville. There were 7 times as many days of rain in Mudville as in Desert Hills. How many days did it rain in Desert Hills last year?

   9 days

5. Maria wants to buy a new car. She will choose a green car or a silver car. The green car costs $16,898, and the silver car costs $1,059.75 less than the green car. What is the cost of the silver car?

   $15,838.25

6. At a country-music concert, 48 people played guitars. That number is 6 times as many as the number of people who played banjos. How many people at the concert played banjos?

   8 people

7. There are 8 apples left on the table. There are $\frac{1}{4}$ as many apples as bananas left on the table. How many bananas are there?

   32 bananas

Name _____ Date _____

Remembering

Add or subtract.

1. $6\frac{6}{7} + 2\frac{3}{14} = 9\frac{1}{14}$

2. $1\frac{2}{3} - \frac{5}{9} = 1\frac{1}{9}$

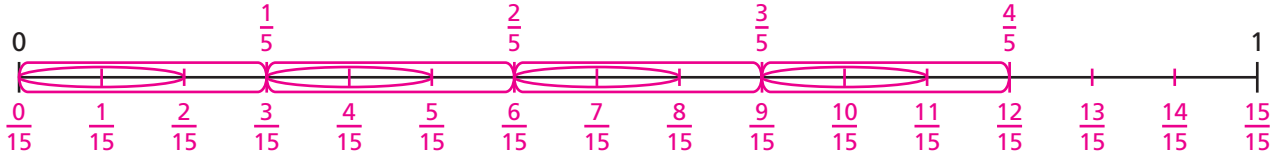
3. $12\frac{4}{5} - 8\frac{5}{10} = 4\frac{3}{10}$

4. $11 - 5\frac{5}{11} = 5\frac{6}{11}$

5. $7\frac{1}{5} + 1\frac{2}{3} = 8\frac{13}{15}$

6. $9\frac{3}{4} + 2\frac{5}{6} = 12\frac{7}{12}$

7. Use the number line to find $\frac{2}{3} \cdot \frac{4}{5}$.
Label all the parts above and below. $\frac{8}{15}$



Write an equation to solve the problem. Use mental math or estimation to show that your answer is reasonable.

Equations and estimates may vary.

8. Terrell runs two timed drills at practice. The first drill takes 33.5 seconds and the second drill takes 28.2 seconds. How much time does it take him to complete both drills?

Equation: 61.7 seconds; $33.5 + 28.2 = n$

Estimate: Possible answer: Round 33.5 to 30 and 28.2 to 30, then add; my answer is reasonable because my estimate is 30 + 30 or about 60 seconds.

9. **Stretch Your Thinking** Maverick has a $12\frac{3}{4}$-foot-long streamer to decorate a hallway at his school. He cuts off $\frac{3}{8}$ of a foot from each end to make it fit the hallway. His principal asks him to make another streamer that is $\frac{5}{6}$ as long. How long is the new streamer?

10 feet

6-6

Homework

Name _____ Date _____

Solve. Draw a model if you will find it helpful.

Equations and models may vary.

1. A flagpole flying the Ohio state flag is $\frac{9}{10}$ the height of a 30-foot-tall flagpole that is flying the U.S. flag. What is the height (h) in feet of the flagpole flying the Ohio state flag?

   27 feet; $h = \frac{9}{10} \cdot 30$

2. The number of students in the Period 7 study hall at Jin's school is 4 times the number of students in Jin's home room. How many students (s) are in the study hall if there are 16 students in Jin's home room?

   64 students; $s = 16 \cdot 4$

3. The enrollment at Roosevelt High School is 1,045 students, which is 5 times the enrollment of Truman Middle School. How many students (s) are enrolled at Truman Middle School?

   209 students; $s = 1{,}045 \div 5$

4. A truck weighs 5,400 pounds. An open-wheel race car weighs $\frac{1}{4}$ as much. How much does the race car weigh?

   1,350 lb; $n = \frac{1}{4} \cdot 5{,}400$

5. Owen and Maya each studied for a test. Owen studied for 90 minutes and Maya studied for 0.5 times that length of time. Who studied more? Multiply to check your prediction.

   Prediction: Owen; $90 \times 0.5 = 45$, and $45 < 90$

6. Sonia's family has 2 children, which is $\frac{2}{3}$ the number of children in Zeke's family. Which family has more children? Divide to check your prediction.

   Prediction: Zeke's family; $\frac{2}{3} \cdot f = 2$ or $f = 2 \div \frac{2}{3} = \frac{2}{1} \cdot \frac{3}{2} = \frac{6}{2} = 3$

6-6 Name _____ Date _____

Remembering

Copy each exercise. Then add or subtract

1. $22.09 - 17 =$ 5.09

2. $7 - 0.05 =$ 6.95

3. $4.07 - 0.3 =$ 3.77

4. $44 + 5.06 =$ 49.06

5. $0.07 + 0.8 =$ 0.87

6. $0.55 + 0.31 =$ 0.86

Solve.

7. $0.5 \times 0.04 =$ 0.02

8. $0.3 \times 0.7 =$ 0.21

9. $0.07 \times 0.2 =$ 0.014

10.
$$\begin{array}{r} 0.46 \\ \times\ 80 \\ \hline 36.8 \end{array}$$

11.
$$\begin{array}{r} 0.06 \\ \times\ 0.8 \\ \hline 0.048 \end{array}$$

12.
$$\begin{array}{r} 3.2 \\ \times\ 9 \\ \hline 28.8 \end{array}$$

Solve each problem. *Show your work.*

13. A soccer team has 35 soccer balls. One fifth of the balls are made of leather. How many of the balls are leather?

7 balls are leather.

14. There are 56 fifth graders who play basketball. That is 7 times the number of fifth graders who play tennis. How many fifth graders play tennis?

8 fifth graders play tennis.

15. Stretch Your Thinking Samantha draws a hopscotch diagram on the sidewalk in front of her house. The diagram is 10 feet long. Her neighbor asks her to draw a 4-foot hopscotch diagram on a canvas mat. In simplest form, what fraction of the length of Samantha's diagram is her neighbor's diagram?

$\frac{2}{5}$

6-7

Homework

Name _____ Date _____

Write an equation and use it to solve the problem. Draw a model it you need to. Equations and models may vary.

Show your work.

1. The Yukon River is 1,980 miles long, and twice as long as the Platte River. How many miles long *(l)* is the Platte River?

   $l = 1{,}980 \div 2$; $l = 990$ miles

2. The height of the Empire State Building in New York City is 1,250 feet, and 364 fewer feet than the height of the World Financial Center building in Shanghai, China. What is the height *(h)* of the World Financial Center building?

   $h = 1{,}250 + 364$; $h = 1{,}614$ feet

3. Olivia is 48 inches tall, and $\frac{2}{3}$ as tall as her brother Cameron. In inches, how tall *(t)* is Cameron?

   $t = 48 \div \frac{2}{3}$; $t = 72$ inches

4. Sydney is shopping for a new television. The cost of a 32-inch LCD flat screen is $149.95. The cost of 46-inch LED flat screen is $280.04 more. What is the cost *(c)* of the 46-inch LED flat screen television?

   $c = \$149.95 + \$280.04$; $c = \$429.99$

5. After arriving home from school, Luis read for $\frac{1}{3}$ of an hour. If he reads for $1\frac{1}{6}$ hours after dinner, how many hours *(h)* will Luis have read altogether?

   $h = \frac{1}{3} + 1\frac{1}{6}$; $h = 1\frac{1}{2}$ hours

6. Each morning, Jared needs 60 minutes to get ready for school. Kiara needs $\frac{7}{12}$ as much time as Jared. How many minutes does Kiara need each morning to get ready for school?

   $t = \frac{7}{12} \cdot 60$; $t = 35$ minutes

7. When compared to Tasha, Liam spent 20 additional minutes doing homework. Liam took 45 minutes to complete his homework. How long did it take Tasha?

   $t = 45 - 20$; $t = 25$ minutes

Name _____ Date _____

Remembering

Solve.

1. $6.9 \times 4.2 = 28.98$

2. $7.3 \times 0.90 = 6.57$

3. $5.8 \times 0.54 = 3.132$

4. $5.3 \times 0.08 = 0.424$

5. $0.7 \times 6.25 = 4.375$

6. $9.4 \times 1.7 = 15.98$

Divide.

7. $0.05\overline{)4.5} = 90$

8. $0.3\overline{)1.5} = 5$

9. $0.04\overline{)2.32} = 58$

10. $0.64\overline{)4.928} = 7.7$

11. $0.6\overline{)5.43} = 9.05$

12. $0.08\overline{)4.32} = 54$

Solve. Draw a model if you will find it helpful.

Equations and models may vary.

13. The gymnasium at Audubon Middle School is $\frac{5}{6}$ the height of a 30-foot-tall building that is next to the gymnasium. What is the height (h) in feet of the gymnasium?

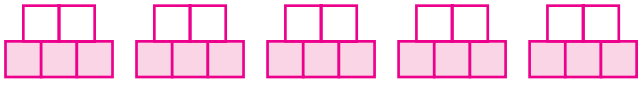
$h = \frac{5}{6} \cdot 30$; 25 feet

14. Amiee's karate instructor has 595 students. That is 5 times the number of students that her dance instructor has. How many students does her dance instructor have?

$s = 595 \div 5$; 119 students

15. Stretch Your Thinking Draw a model that shows $5 \cdot \frac{3}{5} = 3$.

Possible answer:



6-8

Homework

Name _____ Date _____

Solve each problem if possible. If a problem does not have enough information, write the information that is needed to solve the problem.

Show your work.

1. At the school bookstore, Quinn purchased a binder for $4.75 and 4 pens for $0.79 each. What was Quinn's total cost (*c*)?

   $c = \$4.75 + (4 \cdot \$0.79)$; $7.91

2. A school bus has 12 rows of seats, and 4 students can be seated in each row. How many students (*s*) are riding the bus if 11 rows are filled with students, and 2 students are riding in the twelfth row?

   $s = (11 \cdot 4) + 2$; 46 students

3. A group of 16 friends visited an amusement park. When they arrived, $\frac{3}{4}$ of the friends wanted to ride the fastest roller coaster first. How many friends (*f*) wanted to ride?

   $f = (16 \cdot \frac{3}{4})$; 12 friends

4. Zeke is shipping clerk for a large business. Today he spent 90 minutes preparing boxes for shipping. One box weighed 10 pounds and 7 boxes each weighed $3\frac{1}{2}$ pounds. What is the total weight (*w*) of the boxes?

   $w = 10 + (7 \cdot 3\frac{1}{2})$; $34\frac{1}{2}$ pounds

5. A middle school faculty parking lot has 3 rows of parking spaces with 13 spaces in each row, and 1 row of 7 spaces. How many vehicles (*v*) can be parked in the faculty lot?

   $v = (3 \cdot 13) + 7$; 46 vehicles

6. Rochelle's homework always consists of worksheets. Last night, the average amount of time she needed to complete each worksheet was 15 minutes. How much time (*t*) did Rochelle spend completing worksheets last night?

   To solve the problem, the number of worksheets must be known.

6-8 Name _____ Date _____

Remembering

Multiply.

1. 56 × 3 = 168

2. 256 × 7 = 1,792

3. 3,801 × 6 = 22,806

4. 4,239 × 9 = 38,151

5. 84 × 23 = 1,932

6. 67 × 18 = 1,206

7. 88 × 39 = 3,432

8. 42 × 45 = 1,890

Multiply or divide.

9. $0.67\overline{)502.5}$ = 750

10. $0.21\overline{)945}$ = 4,500

11. 0.55 × 0.30 = 0.165

12. 32.5 × 6.3 = 204.75

Write an equation and use it to solve the problem.
Draw a model it you need to. Equations and models may vary.

13. Lindsay is shopping for a new CD player. The cost of one CD player she is considering is $56.55. The cost of a higher priced CD player is $14.25 more. What is the cost (c) of the higher priced CD player?

$c = \$56.55 + \$14.25$; $c = \$70.80$

14. Stretch Your Thinking Use the equation below to write a word problem. Leave out one piece of information that is needed to solve the problem and describe the information that should have been included. $b = (5 \cdot 6) + 10$

Possible answer: Bailey has ten more than 6 times the number of baseball cards that Tim has. How many baseball cards does Bailey have? The missing information is the number of baseball cards Tim has, which is 5. So, Bailey has 40 baseball cards.

6-9

Homework

Name _____ Date _____

Solve each problem. Equations may vary.

Show your work.

1. After a deposit of $100, a withdrawal of $125, and a deposit of $24, the balance in a savings account was $27.28. What was the balance (b) before the deposits and withdrawal?

   $b = 27.28 - 24 + 125 - 100$; $b = \$28.28$

2. The charge for a plumbing repair was $29.60 for parts, $1\frac{1}{4}$ hours for labor at $56 per hour, and a $40 for the service call. What was the total cost (c) of the repair?

   $c = 29.60 + (1\frac{1}{4} \cdot 56) + 40$; $c = \$139.60$

3. Ebi, Jose, Derell, and Asami measured their heights. Ebi's height was 2.5 cm greater than Jose's height. Jose's height was 3.1 cm greater than Derell's height. Derell's height was 0.4 cm less than Asami's height. Ebi is 162.5 cm tall. How tall (t) is Asami?

   $t = 162.5 - 2.5 - 3.1 + 0.4$; $t = 157.3$ cm

4. A school bus has 22 rows of seats, and 4 students can be seated in each row. Students riding in the bus have filled 19 rows of seats, and $\frac{1}{2}$ of the remaining seats. How many seats on the bus are empty (e)?

   $e = \frac{1}{2} \cdot 4(22 - 19)$; $e = 6$ seats

5. Rosa is 13 years and 6 months old and her brother Malcolm is 11 years and 6 months old. Their great grandfather is 89 years old. How many years (y) older is the great grandfather than the combined ages of Rosa and Malcolm?

   $y = 89 - (13.5 + 11.5)$; $y = 64$ years older

6. A riverfront business offers raft trips. The capacity of each raft is 4 people. Suppose 29 adults and 22 children would like to raft. If each raft is filled to capacity, how many people (p) will be aboard the last raft?

   p = the remainder of $(29 + 22) \div 4$; $p = 3$ people

6-9 Name Date

Remembering

Solve.

1. 500 × 60 = 30,000

2. 500 × 50 = 25,000

3. 900 × 40 = 36,000

4. 30 × 10 = 300

5. 200 × 70 = 14,000

6. 300 × 80 = 24,000

Complete each division. Check your answer.

7. $7\overline{)3,451}$ = 493

8. $4\overline{)2,155}$ = 538 R3

9. $8\overline{)4,122}$ = 515 R2

10. $5\overline{)1,242}$ = 248 R2

11. $3\overline{)2,114}$ = 704 R2

12. $9\overline{)5,778}$ = 642

Write and solve an equation to solve the problem. If the problem does not have enough information, write the information that is needed to solve the problem.

Equations may vary.

13. Danny has $14.75, Jason has $22.10, and Trey has $87.45. How much more money (m) does Trey have than the combined amounts of the other two boys?

Show your work.

$m = \$87.45 - (\$14.75 + \$22.10)$; $m = \$50.60$ more

14. Stretch Your Thinking Write a multistep word problem in which the remainder is the solution. Write an equation that will solve it.

Possible answer: Forty-two girls and 60 boys show up to play in a volleyball tournament. If the tournament director forms 5 equal teams, how many players would be left over after the teams are formed? p = the remainder of $(42 + 60) \div 5$; $p = 2$ players

6-10

Homework

Name _____ Date _____

Solve each problem. Equations may vary.

Show your work.

1. A savings account balance was $135.10 before a withdrawal of $60, a deposit of $22.50, and a withdrawal of $45. What was the balance *(b)* after the withdrawals and deposit?

   $b = 135.10 - 60 + 22.50 - 45$; $b = \$52.60$

2. The charge for a bicycle repair was $9.28 for parts, $\frac{1}{4}$ hour of labor at $18 per hour, and a $2 shop fee. What was the total cost *(c)* of the repair?

   $c = 9.28 + (\frac{1}{4} \cdot 18) + 2$; $c = \$15.78$

3. While shopping at the school bookstore, Ric purchased 4 book covers for $1.25 each, and a pen that cost $\frac{2}{5}$ as much as a book cover. What amount of change *(c)* did Ric receive if he paid for his purchase with a $10 bill?

   $c = 10 - (4 \cdot 1.25) - (\frac{2}{5} \cdot 1.25)$; $c = \$4.50$

4. A junior baseball team plays 16 games each summer. Last summer the team scored an average of 3.25 runs per game during the first half of the season. The team scored a total of 29 runs during the second half of the season. How many runs *(r)* were scored by the team last season?

   $r = (16 \cdot \frac{1}{2}) \cdot 3.25 + 29$; $r = 55$ runs

5. Four family members compared their ages. Terell is 3 years younger than Danny. Danny is 1 year younger than Pablo. Pablo's age is $\frac{1}{3}$ Shaniqua's age. How old is Terell (t) if Shaniqua is 36 years old?

   $t = (\frac{1}{3} \cdot 36) - 1 - 3$; $t = 8$ years old

6. Twenty-four soccer players, four coaches, and one equipment manager are traveling to a game in minivans. The capacity each minivan is 6 people. How many people *(p)* are riding in the last minivan if the other minivans are filled to capacity?

   $t =$ the remainder of $(24 + 4 + 1) \div 6$; $t = 5$ people

6-10 Name _____ Date _____

Remembering

Multiply.

1. 495 × 7 = 3,465

2. 126 × 6 = 756

3. 2,689 × 3 = 8,067

4. 3,249 × 8 = 25,992

5. 78 × 21 = 1,638

6. 68 × 55 = 3,740

7. 41 × 33 = 1,353

8. 92 × 89 = 8,188

Divide.

9. $0.7\overline{)49}$ = 70

10. $0.03\overline{)18}$ = 600

11. $0.4\overline{)0.8}$ = 2

12. $0.09\overline{)27}$ = 300

13. $0.5\overline{)172.5}$ = 345

14. $0.06\overline{)8.4}$ = 140

Write an equation to solve the problem.

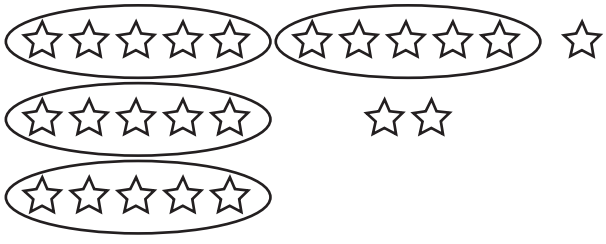
Equations may vary.

15. After a deposit of $250, a withdrawal of $312, and a deposit of $15, the balance in a savings account is $67.50. What was the balance (b) before the deposits and withdrawal?

$b = 67.50 - 15 + 312 - 250$; $b = \$114.50$

16. Stretch Your Thinking Write an equation that is represented by the following diagram.

Equations may vary.



r = the remainder of $(15 + 7 + 1) \div 5$

Name _____ Date _____

The data below represent typical weights for five different breeds of adult male dogs. Make a bar graph to display the data. Choose an appropriate scale based on the weights of the dogs.

Check students' graphs.

Type of Dog	Adult Weight (in pounds)
Labrador retriever	65.25
German shepherd	$75\frac{1}{4}$
golden retriever	72.8
boxer	$70\frac{1}{2}$
standard poodle	64.3

Name _____ Date _____

Remembering

Compare. Write > (greater than) or < (less than).

1. 0.05 < 0.5

2. 0.61 > 0.6

3. 0.77 > 0.7

4. 0.34 < 0.43

5. 0.28 < 0.29

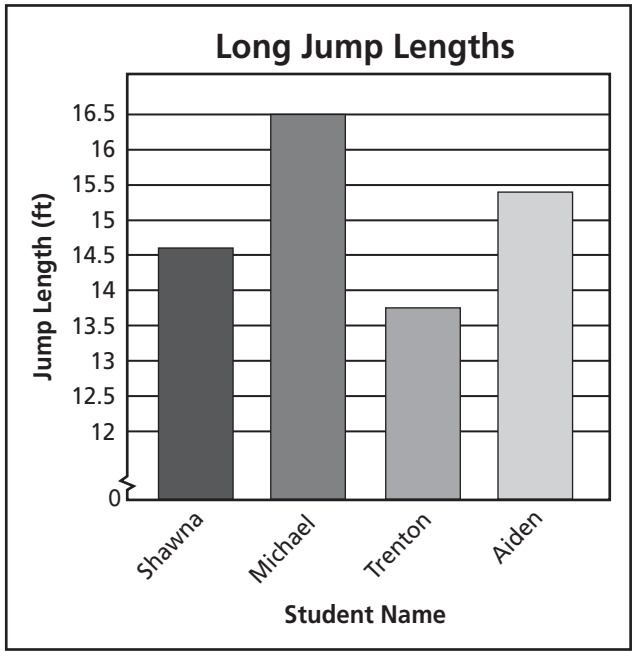
6. 0.981 > 0.978

Solve the problem. Equations may vary.

7. The charge for skating is $6.35 for skate rental, $1\frac{1}{3}$ hours of skating at $18 per hour, and an additional $1 fee. What is the total cost (c) for skating?

$c = 6.35 + (1\frac{1}{3} \cdot 18) + 1$; $c = \$31.35$

8. Stretch Your Thinking Make a table that lists the data from the bar graph. Tables and data may vary.



Long Jump Length

Student Name	Shawna	Michael	Trenton	Aiden
Jump Length (ft)	$14\frac{3}{5}$	16.5	$13\frac{3}{4}$	15.4

7-1 Homework

Name _____ Date _____

1. Consider the expression $2\frac{1}{2} - (\frac{3}{4} + \frac{5}{8})$.

   a. Which operation is done first, subtraction or addition?

   addition

   b. Write the computation in words.

   Possible answer: Subtract the sum of $\frac{3}{4}$ and $\frac{5}{8}$ from $2\frac{1}{2}$.

2. Consider the expression $4.5 + 6 \times 0.1$.

   a. Which operation is done first, addition or multiplication?

   multiplication

   b. Write the computation in words.

   Possible answer: Add 4.5 to the product of 6 and 0.1.

Write the computation in words. Answers may vary.

3. $7 \div \frac{1}{7}$ Divide 7 by $\frac{1}{7}$.

4. $8 - t$ Subtract t from 8.

5. $3.6 \div 0.4 - 0.5$ Divide 3.6 by 0.4 and then subtract 0.5.

6. $5 \cdot (6 + 7)$ Multiply the sum of 6 and 7 by 5.

Write an expression for the words.

7. Add $\frac{1}{6}$ and $\frac{4}{9}$. $\frac{1}{6} + \frac{4}{9}$

8. Subtract the product of 5 and 11 from 100. $100 - 5 \cdot 11$

9. Divide 9 by 2 and then add 5.7. $9 \div 2 + 5.7$

10. Multiply 42 by the sum of 4 and r. $42 \cdot (4 + r)$

7-1 Name Date

Remembering

Complete each division. Check your answer.

1. $3\overline{)1{,}957}$ → 652 R1

2. $9\overline{)3{,}103}$ → 344 R7

3. $7\overline{)5{,}768}$ → 824

Divide.

4. $69\overline{)4{,}899}$ → 71

5. $87\overline{)2{,}001}$ → 23

6. $52\overline{)3{,}432}$ → 66

7. $25\overline{)1{,}175}$ → 47

8. $38\overline{)2{,}660}$ → 70

9. $46\overline{)2{,}438}$ → 53

Write an equation to solve the problem. Draw a model if you need to. Equations may vary.

10. Jesse drives $6\frac{3}{8}$ miles in a golf cart during a round of golf. Payton drives $7\frac{3}{4}$ miles. How much farther does Payton drive?

$1\frac{3}{8}$ miles; $7\frac{3}{4} - 6\frac{3}{8} = n$

11. Stretch Your Thinking Write the computation in words for an expression that uses all four operations (addition, subtraction, multiplication, and division). Then, write an expression for the words.

Possible answer: Subtract 1 from 6. Then multiply by the sum of 3 and 22. Then divide the product by 3. $(6 - 1) \cdot (3 + 22) \div 3$

7-2 Homework Name _____ Date _____

1. Follow the Order of Operations to simplify $27 \div (3 \cdot 3) + 17$

Step 1 Perform operations inside parentheses. $27 \div 9 + 17$

Step 2 Multiply and divide from left to right. $3 + 17$

Step 3 Add and subtract from left to right. 20

Simplify. Follow the Order of Operations.

2. $54 - 200 \div 4$

4

3. $0.8 \div (0.07 - 0.06)$

80

4. $3 \cdot 8 - 6 \div 2$

21

5. $(\frac{3}{8} + \frac{1}{4}) \cdot 16$

10

6. $64 + 46 - 21 + 29$

118

7. $72 \div (7 - 1) \cdot 3$

36

8. $0.8 - 0.5 \div 5 + 0.2$

0.9

9. $\frac{5}{6} - 4 \cdot \frac{1}{12}$

$\frac{1}{2}$

10. $5 \cdot 15 \div 3$

25

11. $32 \div (2.3 + 1.7) \cdot 3$

24

12. $(1\frac{1}{2} - \frac{3}{4}) \times \frac{1}{4}$

$\frac{3}{16}$

13. $(6.3 - 5.1) \cdot (0.7 + 0.3)$

1.2

14. $12 \div 0.1 + 12 \div 0.01$

1,320

15. $\frac{1}{2} \cdot \frac{1}{2} \div \frac{1}{2}$

$\frac{1}{2}$

16. $10 - 4 + 2 - 1$

7

7-2 Name _____ Date _____

Remembering

Solve.

1. $5\overline{)44.3}$ → 8.86

2. $2\overline{)125.65}$ → 62.825

3. $5\overline{)34.565}$ → 6.913

Write an equation to solve the problem. Draw a model if you need to. Equations and models may vary.

4. The students of Turner Middle School are going on a field trip. There are 540 students attending. A bus can hold 45 students. How many buses are needed for the field trip?

12 buses; $n = 540 \div 45$

5. The area of a rectangular court is 433.37 square meters, and the length of the court is 28.7 meters. What is width of the court?

15.1 meters; $n \cdot 28.7 = 433.37$

Write the computation in words. Answers may vary.

6. $5 \div \frac{1}{8}$ Divide 5 by $\frac{1}{8}$.

7. $2.4 \div 0.6 + 0.2$ Divide 2.4 by 0.6 and then add 0.2.

8. Stretch Your Thinking Write step-by-step instructions for simplifying the following expression.

$10 \cdot [60 \div (11 + 4)] - 3$

$10 \cdot [60 \div 15] - 3 =$	Add 11 and 4.
$10 \cdot 4 - 3 =$	Divide 60 by 15.
$40 - 3 =$	Multiply 10 by 4.
$37 =$	Subtract 3 from 40.

7-3 **Homework**

Name _____ Date _____

Evaluate the expression.

1. $m \div 0.3$ for $m = 1.8$

6

2. $3\frac{1}{3} - x$ for $x = \frac{5}{6}$

$2\frac{1}{2}$

3. $50 - n \div 2$ for $n = 30$

35

4. $x \cdot 1\frac{1}{2}$ for $x = 10$

15

5. $10 \cdot (20 + d)$ for $d = 30$

500

6. $120 \div (x \cdot 6)$ for $x = 2$

10

7. $a \cdot \frac{1}{3} + 3 \div \frac{1}{3}$ for $a = 3$

10

8. $(0.15 - t) \cdot 100$ for $t = 0.02$

13

9. $h \div 0.07$ for $h = 4.9$

70

10. Max bought a pair of jeans for $32 and three T-shirts for t dollars each.

a. Write an expression for the total amount Max spent.

$32 + 3t$ dollars

b. If each T-shirt cost $9, how much did Max spend?

$59

11. Luke is 4 years younger then Zoe. Mischa is half Luke's age. Let z be Zoe's age.

a. Write an expression for Luke's age.

$z - 4$

b. Write an expression for Mischa's age.

$\frac{1}{2} \cdot (z - 4)$ or $(z - 4) \div 2$

c. If Zoe is 16 years old, how old are Luke and Mischa?

Luke: 12 years old; Mischa: 6 years old

7-3 Name Date

Remembering

Solve.

1. $0.8\overline{)64}$ 80

2. $0.008\overline{)72}$ 9,000

3. $0.04\overline{)16}$ 400

4. $0.5\overline{)80}$ 160

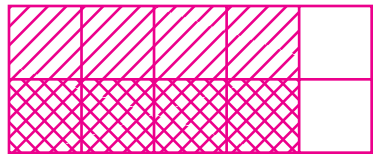
5. $0.48\overline{)1,536}$ 3,200

6. $0.76\overline{)1,596}$ 2,100

Write a word problem for the equation. Draw a model to show the product. Sample context and model is shown.

7. $\frac{1}{2} \cdot \frac{4}{5} = x$

Four-fifths of Bailey's class want to play an instrument in the band. Of those classmates, $\frac{1}{2}$ want to play a percussion instrument. What fraction of the students in the class want to play a percussion instrument?



Simplify. Follow the Order of Operations.

8. $\frac{3}{5} - 2 \cdot \frac{1}{10}$ $\frac{2}{5}$

9. $40 \div (6 - 1) \cdot 3$ 24

10. $\left(\frac{1}{2} + \frac{3}{8}\right) \cdot 24$ 21

11. $0.4 \div (0.09 - 0.07)$ 20

12. $66 - 150 \div 10$ 51

13. $6 \cdot 5 - 9 \div 3$ 27

14. Stretch Your Thinking Write a two-operation expression that equals 31 when evaluated for $x = 5$.

Possible answer: $465 \div (x \cdot 3)$

Name _____ Date _____

1. a. Write the first five terms of a numerical pattern that begins with 2 and then adds 3.

2, 5, 8, 11, 14

b. Write an expression for the sixth term of the pattern.

$2 + 3 + 3 + 3 + 3 + 3$ or $2 + (5 \cdot 3)$

c. Write the sixth term.

17

2. a. Write the first five terms of a pattern that begins with 5, and then adds 5.

b. Write the first five terms of a pattern that begins with 20, and then adds 20.

5	10	15	20	25
20	40	60	80	100

c. Circle the corresponding pairs of terms in the patterns. How does the top term compare to the bottom term?

The top term is the bottom term divided by 4.

d. How does the bottom term compare to the top term?

The bottom term is the top term times 4.

Complete the table and use it for Problems 3 and 4.

Cost of Music Downloads

Number of Songs	1	2	3	4	5
Cost in Dollars	$0.99	$1.98	$2.97	$3.96	$4.95

3. Describe a relationship shared by the corresponding terms.

Sample answer: The cost in dollars is the number of songs multiplied by ninety-nine cents.

4. What would be the cost of downloading 6 songs?

$5.94

7-4 Name _____ Date _____

Remembering

Solve.

Show your work.

1. Manny has 40 ounces of butter that he is cutting into 1.25-ounce slices. How many slices will he have?

32 slices of butter

2. Tracy is running in a 5.25-kilometer race on Saturday. A marathon is approximately 42 kilometers. How many times as long as Tracy's race is a marathon?

8 times

Write an equation to solve the problem. Use mental math or estimation to show that your answer is reasonable.

Equations and estimates may vary.

3. Each Saturday morning, Janie works 5 hours and earns $35.75. How much does Janie earn for each hour she works?

Equation: $7.15; 35.75 \div 5 = n$

Estimate: Janie earns about $7 per hour because $5 \times 7 = 35$.

Evaluate the expression.

4. $120 \div (t \cdot 3)$ for $t = 4$

10

5. $m \cdot 2\frac{2}{3}$ for $m = 5$

$13\frac{1}{3}$

6. $4 \cdot (2 + c)$ for $c = 8$

40

7. $7\frac{1}{2} - p$ for $p = \frac{5}{6}$

$6\frac{2}{3}$

8. $60 - z \div 2$ for $z = 20$

50

9. $x \div 0.9$ for $x = 3.6$

4

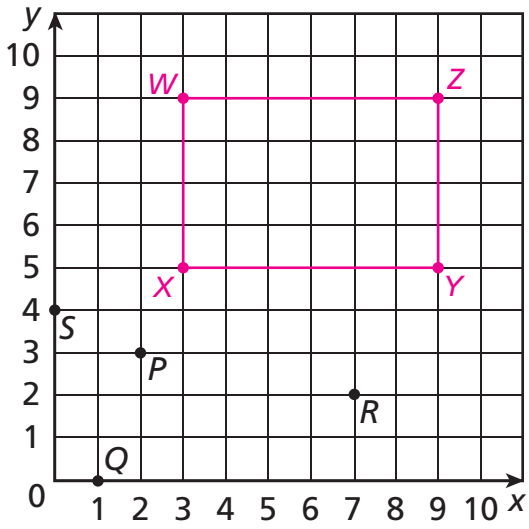
10. Stretch Your Thinking Create your own numerical pattern. Write the starting number, the rule, and the first 5 terms in the pattern. Then write an expression for the tenth term.

Possible answer: 2; add 7; 2, 9, 16, 23, 30; $2 + (7 \cdot 9)$

7-5 Homework

Name _____ Date _____

Use the coordinate plane below to answer the questions.



Write an ordered pair to represent the location of each point.

1. point *P* (2, 3) **2.** point *Q* (1, 0) **3.** point *R* (7, 2) **4.** point *S* (0, 4)

Plot and label a point at each location.

5. point *W* at (3, 9) **6.** point *X* at (3, 5) **7.** point *Y* at (9, 5)

Solve.

8. Suppose points *W*, *X*, and *Y* represent three vertices of rectangle *WXYZ*. Where should point *Z* be plotted?

(9, 9)

Plot and label point *Z*. Then use a ruler to draw the rectangle.

9. What ordered pair represents the point at the center of the rectangle?

(6, 7)

10. Use subtraction to find the lengths of segments *WX* and *XY*. Show your work.

segment *WX*: $9 - 5 = 4$; segment *XY*: $9 - 3 = 6$

7-5 Name _____ Date _____

Remembering

Divide.

1. $0.9\overline{)54}$ = 60

2. $0.09\overline{)27}$ = 300

3. $1.2\overline{)0.6}$ = 0.5

4. $0.06\overline{)48}$ = 800

5. $0.4\overline{)188.4}$ = 471

6. $0.08\overline{)56}$ = 700

7. **a.** Write the first five terms of a numerical pattern that begins with 5 and then adds 6.

5, 11, 17, 23, 29

b. Write an expression for the sixth term of the pattern.

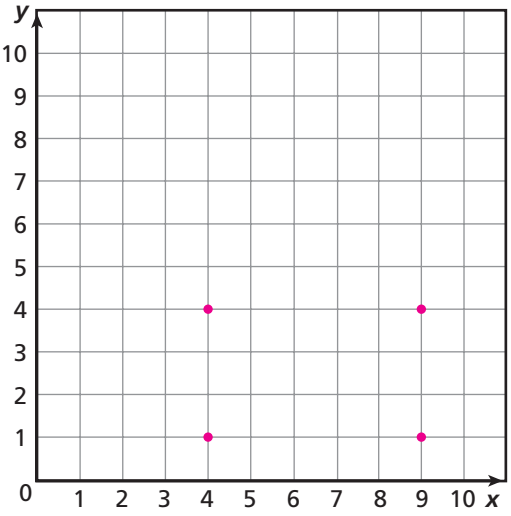
$5 + 6 + 6 + 6 + 6 + 6$ or $5 + (5 \cdot 6)$

c. Write the sixth term.

35

8. **Stretch Your Thinking** List and graph four ordered pairs that are vertices of a rectangle with a perimeter of 16 units.

Possible answer: (4, 1), (4, 4), (9, 1), (9, 4)

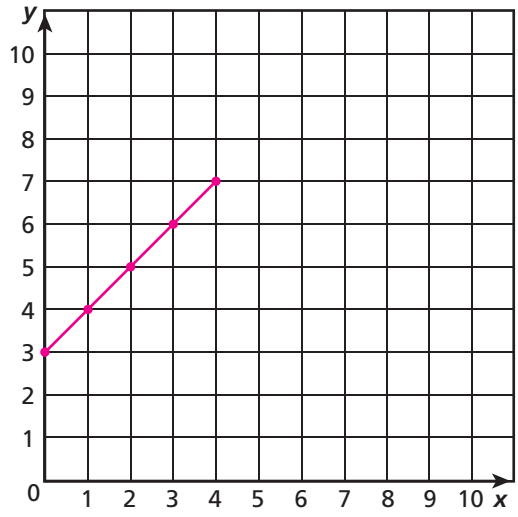


Name _____ Date _____

The *add 3* table below shows a numerical pattern in the left column and the result of adding 3 in the right column.

add 3	
0	3
1	4
2	5
3	6
4	7

(*x*, *y*)
(0, 3)
(1, 4)
(2, 5)
(3, 6)
(4, 7)

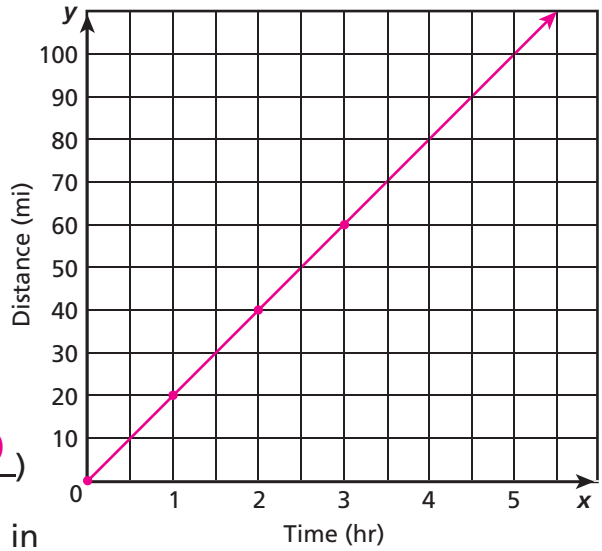


1. Complete the *add 3* table.
2. Complete the (*x*, *y*) table.
3. Each (*x*, *y*) pair of terms represents a point. Graph and connect the points.

A freight train is traveling at a constant speed of 20 miles per hour.

4. Complete the table to show the distance the train will travel in 0, 1, 2, and 3 hours.

Time (hr)	0	1	2	3
Distance (mi)	0	20	40	60



5. Write the ordered (*x*, *y*) pairs the data represent. Then graph and connect the points and extend the line.

(0, 0) (1, 20) (2, 40) (3, 60)

6. How far would you expect the train to travel in $2\frac{1}{2}$ hours? Explain your answer.

50 miles; Sample explanation: The graph passes through the point at $(2\frac{1}{2}, 50)$.

7-6 Name _____ Date _____

Remembering

Multiply.

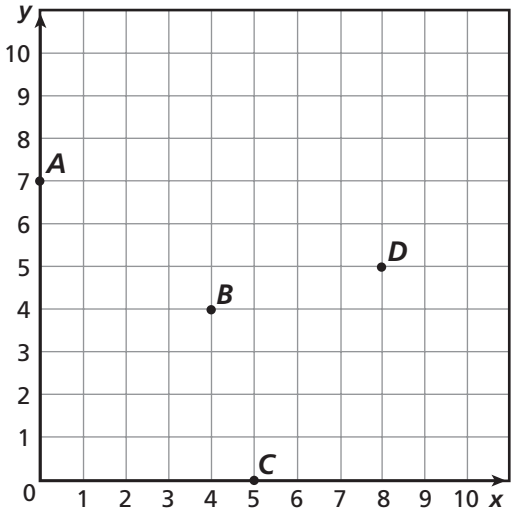
1. 76 × 4 = 304

2. 199 × 6 = 1,194

3. 7,907 × 2 = 15,814

4. 98 × 78 = 7,644

Use the coordinate plane below to answer the questions.



Write an ordered pair to represent the location of each point.

5. point *A* (0, 7)

6. point *B* (4, 4)

7. point *C* (5, 0)

8. point *D* (8, 5)

9. Stretch Your Thinking Give the ordered pair for a point *E* so that when the points *B*, *D*, *E*, and *C* are connected (in that order), a square is formed. Then, find the area of square *BDEC*.

(9, 1); 17 square units

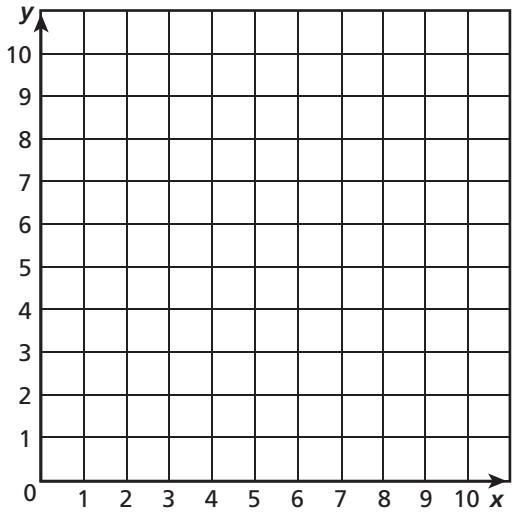
7-7

Homework

Name _____ Date _____

1. On the coordinate plane below, plot and label points to design your own constellation. When you return to class, share your constellation with your class.

   Constellations and answers will vary.



2. Write the name of your constellation.

   _____

3. Write the order in which your points are to be connected.

   _____

   _____

   _____

4. Explain how you can tell that two points will be on the same horizontal line just by looking at their coordinates.

   The points will have the same *y*-coordinate.

   _____

5. Explain how you can tell that two points will be on the same vertical line just by looking at their coordinates.

   The points will have the same *x*-coordinate.

   _____

Remembering

Write and solve an equation to solve the problem.

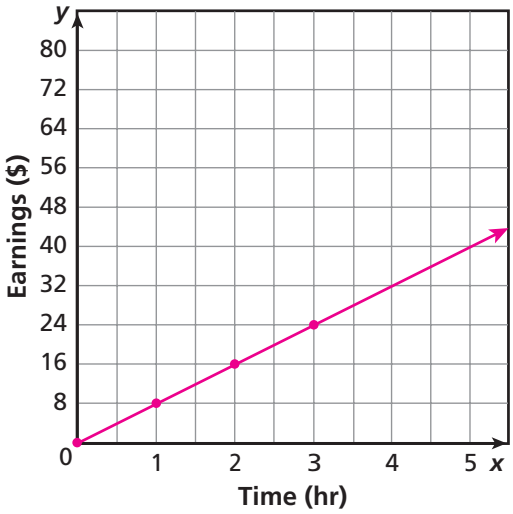
1. A group of 25 classmates visits an amusement park. When they arrive, $\frac{3}{5}$ of the students want to ride the fastest roller coaster first. How many students is this?

$f = \frac{3}{5} \cdot 25$; 15 students

Nicole makes $8 per hour working at a daycare center.

2. Complete the table.

Time (hr)	0	1	2	3
Earnings ($)	0	8	16	24



3. Write the ordered (*x*, *y*) pairs the data represent. Then graph and connect the points and extend the line.

(0, 0), (1, 8), (2, 16), (3, 24)

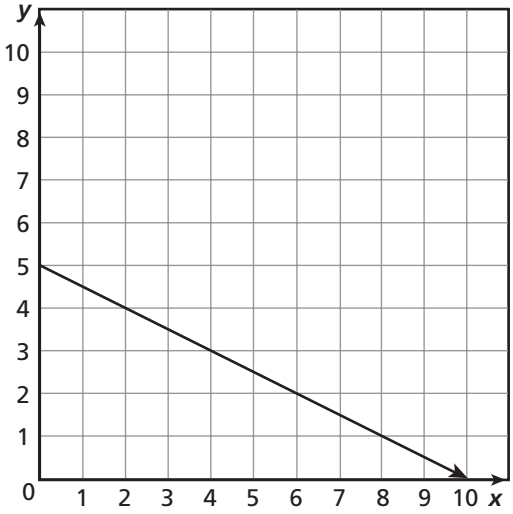
4. How much money would Nicole make in $2\frac{1}{2}$ hours? Explain your answer.

$20.00; Sample explanation: The graph passes through the point at $\left(2\frac{1}{2}, 20\right)$.

5. **Stretch Your Thinking** Which points listed lie on the line? Which points do not lie on the line? Explain.

(0, 5) (1, 5) (2, 4), (3, 6), (4, 3)

On the line: (0, 5) (2, 4), (4, 3);
Not on the line: (1, 5), (3, 6).
Possible answer: Plot each point on the coordinate plane to see if the point lies on the line.



8-1 Homework

Name _____ Date _____

Complete.

1. 75 cm = 0.75 m
2. 802 cm = 8.02 m
3. 251 km = 251,000 m
4. 0.95 mm = 0.095 cm
5. 0.46 cm = 4.6 mm
6. 32 m = 32,000 mm
7. 58 mm = 0.058 m
8. 2,581 m = 2.581 km
9. 35.6 mm = 3.56 cm
10. 2.92 cm = 29.2 mm

Solve.

11. Jason ran 325 meters farther than Kim ran. Kim ran 4.2 kilometers. How many meters did Jason run? Estimate to check your answer.

4,525 m

Estimate: Possible estimate: 4,300 m

12. On each of 3 days, Derrick rode 6.45 km to school, 150 meters to the library, and then 500 meters back home. How many kilometers did he ride for the 3 days altogether?

21.3 km

13. Lisa wants to frame her little brother's drawing as a gift to her mother. The rectangular drawing is 43.5 centimeters by 934 millimeters. How many centimeters of wood framing will she need?

273.8 cm

14. Marguerite is building a box from strips of wood. She needs 78 pieces of wood that are each 29 centimeters long. The wood comes in boards that are 6 meters long. How many boards will she need? Explain.

4 boards; Possible explanation: She must first find out how many pieces of wood that length she can get from 1 board. 6 m ÷ 0.29 m = 20 pieces (20 cm left over). 78 ÷ 20 = 3.9, so she will need 4 boards.

8-1 Name Date

Remembering

Multiply.

1. 89 × 7 = 623

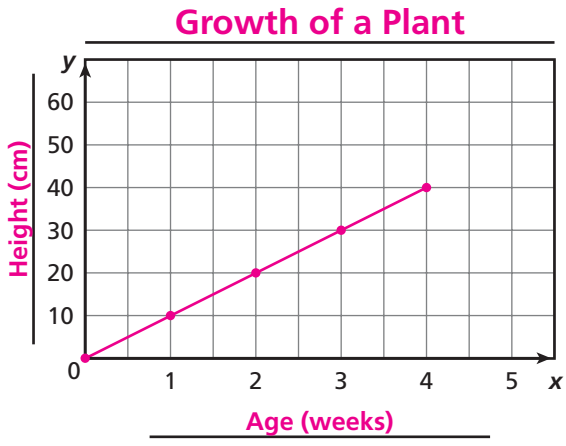
2. 221 × 3 = 663

3. 6,077 × 6 = 36,462

4. 77 × 65 = 5,005

Suppose a plant grows at the rate shown in the table. Use the table to complete Exercises 5 and 6.

Growth of a Plant	
Age (weeks)	Height (cm)
0	0
1	10
2	20
3	30
4	40



5. Write five ordered pairs that the data represent.

(0, 0), (1, 10), (2, 20), (3, 30), (4, 40)

6. Graph the ordered pairs. What does each axis of the graph represent? Title the graph and label each axis.

The *x*-axis represents age in weeks.

The *y*-axis represents height in centimeters.

7. Stretch Your Thinking Find the sum of 130 cm and 50 mm in meters. Show your work.

130 ÷ 100 = 1.3 or 1.3 m; 50 ÷ 1,000 = 0.05 or 0.05 m; 1.3 m + .05 m = 1.35 m

8-2

Homework

Name _____ Date _____

Complete.

1. 5,811 mL = 5.811 L
2. 297 L = 0.297 kL
3. 1.09 kL = 1,090 L
4. 32,500 mL = 32.5 L
5. 53.1 L = 53,100 mL
6. 5.66 L = 5,660 mL
7. 2,848 mL = 2.848 L
8. 431 L = 0.431 kL
9. 0.56 L = 560 mL
10. 0.78 L = 780 mL

Solve.

11. Jennifer made 5 L of punch for her party. Her brother made another 750 mL. If they combine the two batches, how many 180 mL servings would they have? Would there be any punch left over? If so, how much?

31 servings; yes; 170 mL

12. On an average day, a horse might drink 50 L, a sheep might drink 4 L, and a chicken might drink 200 mL. How much water would a farm with 3 horses, 15 sheep, and 12 chickens need for a day?

212.4 L

13. Terrell has a water purifier for backpacking. It will purify 1 liter of water in 1 minute. How long would it take Terrell to purify enough water for 4 canteens that each hold 750 mL, and two that each hold 1.5 L?

6 minutes

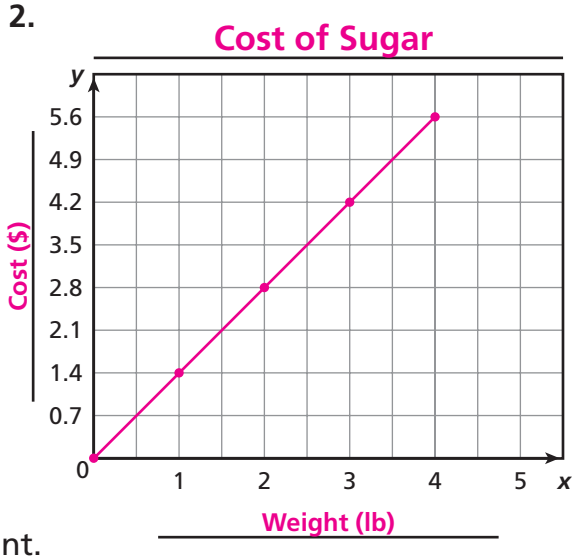
14. The Institute of Medicine determined that a man should drink 3 liters of fluids a day and a woman should drink 2.2 liters. Mr. Morrison drank 880 mL of water at breakfast and Mrs. Morrison drank 700 mL. How much more will they both need to drink combined to meet the recommended amounts for the day?

3.62 L

Remembering

Suppose the cost of sugar changes at the rate shown in the table. Use the table to complete Exercises 1 and 2.

Cost of Sugar	
Weight (lb)	Cost ($)
0	$0
1	$1.40
2	$2.80
3	$4.20
4	$5.60



1. Write five ordered pairs that the data represent.
(0, 0), (1, 1.4), (2, 2.8), (3, 4.2), (4, 5.6)

2. Graph the ordered pairs. What does each axis of the graph represent? Title the graph and label each axis.
The *x*-axis represents weight in pounds; the *y*-axis represents cost in dollars.

Complete the equation.

3. 14 m = 14,000 mm

4. 0.35 mm = 0.035 cm

5. 790 cm = 7.9 m

6. 0.88 cm = 8.8 mm

7. 782 km = 782,000 m

8. 58 cm = 0.58 m

9. Stretch Your Thinking Shannon pours four different liquid ingredients into a bowl. The sum of the liquid ingredients is 8.53 liters. Two of her measurements are in liters and two of her measurements are in milliliters. Give an example of possible measurements for Shannon's four liquids.
Possible example: 2.5 liters, 4 liters, 2,000 milliliters, 30 milliliters

8-3

Homework

Name _____ Date _____

Complete.

1. 973 mg = 0.973 g
2. 0.058 g = 58 mg
3. 10.64 kg = 10,640 g
4. 4.001 kg = 4,001,000 mg
5. 29 g = 0.029 kg
6. 7 mg = 0.007 g
7. 3.7 g = 3,700 mg
8. 84 g = 0.084 kg

Solve.

9. The mass of substances left in a sample after the liquid is evaporated is called the *total dissolved solids*. Kim split up 2 liters of water into three different samples and boiled all the liquid away in each. The masses of solids left in the three samples were 2.025 grams, 457 mg, and 589 mg. Using the table at the right, how should Kim classify the water?

Total Dissolved Solids in 1 Liter of Solution	
fresh	< 1,000 mg
brackish	1,000 to 10,000 mg
saline	> 10,000 mg

(2,025 + 457 + 589) ÷ 2 =1,535.5; brackish

10. Jamal watched his older brother Robert lift weights. The bar alone had a mass of 20 kg. On the bar he had two 11.4 kg weights, two 4.5 kg weights, and four 450 g weights. What mass was Robert lifting?

53.6 kg

11. Barry bought 25 kg of fish-flavored cat food and 35 kg of chicken-flavored cat food for the cat rescue center. He is going to divide the cat food into packets of 300 grams. How many packets will he make?

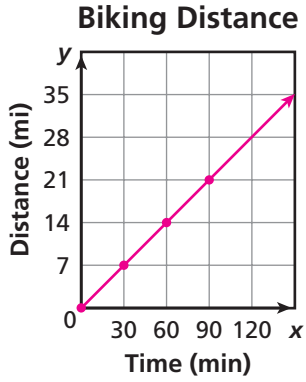
200 packets

Remembering

Greyson rides his bike at a constant rate. In 30 minutes, Greyson can bike 7 miles.

1. Complete the table to show the distance Greyson can ride in 0, 30, 60, and 90 minutes.

Time (min)	0	30	60	90
Distance (mi)	0	7	14	21



2. Write the ordered (*x, y*) pairs the data represent. Then graph the points and extend the line.

(0, 0) (30, 7) (60, 14) (90, 21)

3. How far would you expect Greyson to ride in 105 minutes? Explain your answer.

about $24\frac{1}{2}$ miles; Possible explanation: The time is halfway between 90 min and 120 min so I would expect the distance to be halfway between 21 mi and 28 mi.

Complete the equation.

4. 435 L = 0.435 kL

5. 6.71 L = 6,710 mL

6. 86,300 mL = 86.3 L

7. 109 L = 0.109 kL

8. 5,669 mL = 5.669 L

9. 30.8 L = 30,800 mL

10. 9.12 kL = 9,120 L

11. 9,235 mL = 9.235 L

12. Stretch Your Thinking Write three measurements using grams and three measurements using milligrams that total 15.4 grams.

Possible answer: 3.5 g, 2.7 g, 6.2 g, 444 mg, 1,098 mg, 1,458 mg

8-4 Homework

Name _____ Date _____

Complete.

1. 36 in. = 3 ft

2. 12 ft = 4 yd

3. 36 in. = 1 yd

4. 48 in. = 4 ft

5. 6 ft = 2 yd

6. 108 in. = 3 yd

7. $7\frac{1}{2}$ ft = 90 in.

8. 66 in. = $5\frac{1}{2}$ ft

9. 6 yd = 216 in.

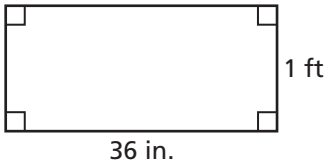
10. 12 yd = 432 in.

11. $1\frac{1}{4}$ yd = $3\frac{3}{4}$ ft

12. 90 ft = 30 yd

Find the perimeter of each figure in feet.

13.



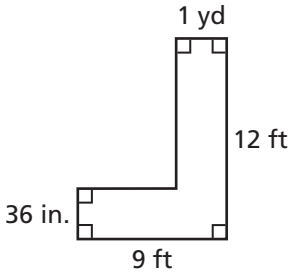
P = 8 ft

14.

P = 30 ft

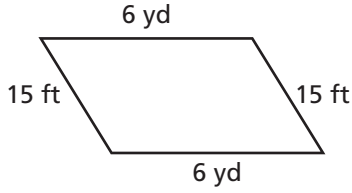
Find the perimeter of each figure in yards.

15.



P = 14 yd

16.



P = 22 yd

Name _____ Date _____

Remembering

Write an expression for the words.

1. Multiply 12 by the sum of 8 and t. $12 \cdot (8 + t)$
2. Divide 10 by 4 and then subtract 6.2. $10 \div 4 - 6.2$
3. Add the product of 7 and 10 to 80. $80 + 7 \cdot 10$
4. Subtract $\frac{1}{8}$ from $\frac{5}{6}$. $\frac{5}{6} - \frac{1}{8}$

Simplify. Follow the Order of Operations.

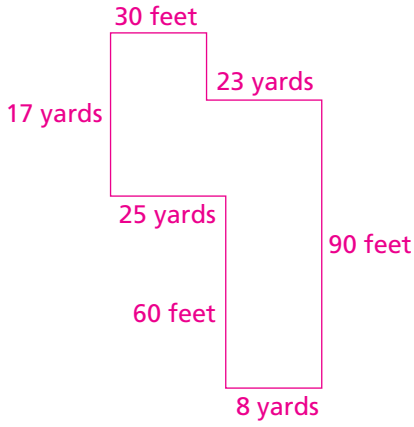
5. $12 - 7 + 9 - 2$ — 12
6. $15 \div 0.3 + 6 \div 0.02$ — 350
7. $(2\frac{3}{8} - \frac{1}{4}) \times \frac{1}{5}$ — $\frac{17}{40}$
8. $\frac{1}{6} \cdot \frac{1}{6} \div \frac{1}{6}$ — $\frac{1}{6}$
9. $(7.2 - 3.3) \cdot (0.5 + 0.5)$ — 3.9
10. $36 \div (6.6 + 2.4) \cdot 4$ — 16

Complete.

11. 5 mg = 0.005 g
12. 13.45 kg = 13,450 g
13. 66 g = 0.066 kg
14. 0.021 g = 21 mg
15. 5.003 kg = 5,003,000 mg
16. 782 mg = 0.782 g

17. **Stretch Your Thinking** Draw a figure composed of three different rectangles that has a perimeter of 140 yards. Use measurements in yards and feet to label the sides of your figure.

Possible answer:



8-5

Homework

Name _____ Date _____

Complete.

1. 2 pt = 1 qt
2. 4 qt = 1 gal
3. 2 c = 1 pt
4. 3 qt = 6 pt
5. 1 qt = 4 c
6. 5 gal = 20 qt
7. 13 qt = 52 c
8. 23 qt = 46 pt
9. 112 c = 7 gal
10. $11\frac{1}{2}$ gal = 46 qt
11. 112 c = 56 pt
12. 75 pt = $37\frac{1}{2}$ qt

Write a fraction.

13. What fraction of 1 gallon is 1 quart?
$\frac{1}{4}$

14. What fraction of 1 quart is 3 cups?
$\frac{3}{4}$

15. What fraction of 1 gallon is 5 cups?
$\frac{5}{16}$

16. What fraction of 1 pint is 1 cup?
$\frac{1}{2}$

Solve. *Show your work.*

17. Cesar bought 2 bottles of juice that each hold 2 quarts and another bottle that holds $1\frac{1}{2}$ gallons of juice. How many quarts of juice did he buy?
10 qt

18. Samantha saw two bottles of ketchup at the store for the same price. One bottle contained 4 pints of ketchup, and the other contained 1.25 quarts of ketchup. Which bottle was the better bargain?
The 4-pint bottle

19. A pitcher is full of lemonade. Which unit of liquid volume best describes the amount of lemonade in the pitcher? Explain.
Accept reasonable answers and explanations. The capacity of a lemonade pitcher is likely to be measured in quarts, or gallons if the capacity is, for example, 4 quarts.

8-5 Name _____ Date _____

Remembering

Divide.

1. $5\overline{)2,245}$ → 449

2. $6\overline{)3,277}$ → 546 R1

3. $9\overline{)4,558}$ → 506 R4

4. $56\overline{)1,344}$ → 24

5. $47\overline{)3,619}$ → 77

6. $23\overline{)2,047}$ → 89

7. $91\overline{)4,315}$ → 47 R38

8. $62\overline{)4,030}$ → 65

9. $18\overline{)1,241}$ → 68 R17

Complete.

10. 24 in. = 2 ft

11. 27 ft = 9 yd

12. 3 ft = 36 in.

13. 180 in. = 5 yd

14. 6 yd = 18 ft

15. 7 ft = 84 in.

16. 24 yd = 72 ft

17. 8 ft = 96 in.

18. 252 ft = 84 yd

19. Stretch Your Thinking What fraction of a gallon is 3 pints?

$\frac{3}{8}$

8-6

Homework

Name _____ Date _____

Complete.

1. 1 lb = 16 oz
2. 2 T = 4,000 lb
3. 32 oz = 2 lb
4. 1,000 lb = 0.5 T
5. 4 lb = 64 oz
6. 10,000 lb = 5 T

Write a mixed number in simplest form to represent the number of pounds equivalent to each number of ounces.

7. 40 oz = $2\frac{1}{2}$ lb
8. 50 oz = $3\frac{1}{8}$ lb
9. 44 oz = $2\frac{3}{4}$ lb
10. 68 oz = $4\frac{1}{4}$ lb
11. 22 oz = $1\frac{3}{8}$ lb
12. 94 oz = $5\frac{7}{8}$ lb

Solve. *Show your work.*

13. At a garden center, grass seed sells for $8 per pound. Kalil spent $10 on grass seed. What amount of seed did he buy?

$1\frac{1}{4}$ lb

14. Two boxes of tea weigh 3 oz. The Tea Time Tasty Tea Company packs 112 boxes in a case of tea. How many pounds does each case of tea weigh?

$10\frac{1}{2}$ lb

15. Juli uses 12 ounces of cheese in her potato soup recipe. Her recipe yields 8 servings. If Juli needs enough for 20 servings, how many pounds of cheese will she need?

$1\frac{7}{8}$ lb

16. At a grocery store, salted peanuts in the shell cost 30¢ per ounce. Is $5.00 enough money to buy 1 pound of peanuts? If it is, what amount of money will be left over?

yes; 20¢ or $0.20

8-6 Name _____ Date _____

Remembering

Complete the pattern.

1. $5 \times 10^1 = 5 \times 10 =$ 50

$5 \times 10^2 = 5 \times 100 =$ 500

$5 \times 10^3 = 5 \times 1{,}000 =$ 5,000

$5 \times 10^4 = 5 \times 10{,}000 =$ 50,000

2. $45 \times 10^1 =$ 45×10 $= 450$

$45 \times 10^2 =$ 45×100 $= 4{,}500$

$45 \times 10^3 =$ $45 \times 1{,}000$ $= 45{,}000$

$45 \times 10^4 =$ $45 \times 10{,}000$ $= 450{,}000$

3. $17 \times 10^1 = 17 \times 10 =$ 170

$17 \times 10^2 = 17 \times 100 =$ 1,700

$17 \times 10^3 = 17 \times 1{,}000 =$ 17,000

$17 \times 10^4 = 17 \times 10{,}000 =$ 170,000

4. $342 \times 10^1 =$ 342×10 $= 3{,}420$

$342 \times 10^2 = 342 \times 100 =$ 34,200

$342 \times 10^3 =$ $342 \times 1{,}000$ $= 342{,}000$

$342 \times 10^4 = 342 \times 10{,}000 =$ 3,420,000

Solve.

5. 8 qt = 16 pt

6. 2 qt = 8 c

7. 4 c = 2 pt

8. 80 cups = 5 gal

9. $9\frac{1}{2}$ gal = 38 qt

10. 80 cups = 40 pt

11. 6 qt = 24 cups

12. 64 pt = 32 qt

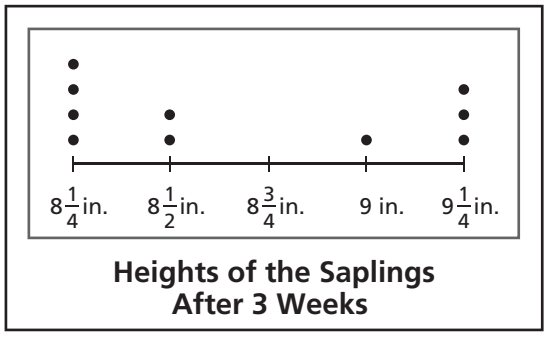
13. $12\frac{1}{2}$ qt = 25 pt

14. Stretch Your Thinking Divide 15 pounds of rice into four unequal measures using ounces.

Possible answer: 24 oz + 48 oz + 72 oz + 96 oz

Name _____ Date _____

1. Perry is growing maple saplings. After 3 weeks, he measured the saplings to the nearest quarter inch and drew this line plot with the data. Use the line plot to answer questions about the saplings.



Heights of the Saplings After 3 Weeks

a. How many saplings were there?

10

b. How many saplings were less than 9 inches tall?

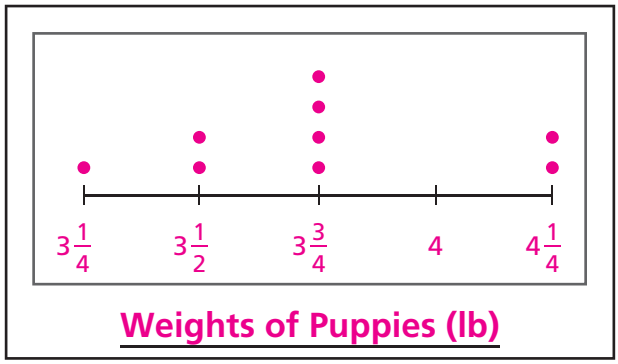
6

c. What is the combined height of all the saplings?

$86\frac{3}{4}$ inches

2. As a volunteer at the animal shelter, Uma weighed all the puppies. She made a list of the weights as she weighed them. The puppies weights were $3\frac{3}{4}$ lb, $4\frac{1}{4}$ lb, $3\frac{1}{2}$ lb, $3\frac{3}{4}$ lb, $3\frac{1}{4}$ lb, $3\frac{3}{4}$ lb, $3\frac{1}{2}$ lb, $4\frac{1}{4}$ lb, and $3\frac{3}{4}$ lb.

a. Draw a line plot of the puppies' weights.



Weights of Puppies (lb)

b. Use the line plot to write and answer a question about the data.

Questions will vary. Possible question: How many puppies weighed at least $3\frac{3}{4}$ pounds?

Answer: 6 puppies

8-7 Name _____ Date _____

Remembering

Write an equation to solve each problem. Show your work.

Equations may vary.

1. At the school bookstore, Harrison purchases 3 notebooks for $2.50 each, 10 pens for $0.35 each, and 5 mechanical pencils for $0.89 each. By what amount (a) is the cost of the mechanical pencils greater than the cost of the pens?

$a = (5 \cdot \$0.89) - (10 \cdot \$0.35)$; $a = \$0.95$

2. This week an employee is scheduled to work 6 hours each day Monday through Friday, and $3\frac{1}{2}$ hours on Saturday morning. If the employee's goal is to work 40 hours, how many additional hours (h) must he work?

$h = 40 - (6 \cdot 5 + 3\frac{1}{2})$; $h = 6.5$ or $6\frac{1}{2}$ hours

Complete.

3. 6 T = 12,000 lb

4. 3 lb = 48 oz

5. 80 oz = 5 lb

6. 5,000 lb = 2.5 T

7. 8 lb = 128 oz

8. 20,000 lb = 10 T

Write a mixed number in simplest form to represent the number of pounds equivalent to each number of ounces.

9. 66 oz = $4\frac{1}{8}$ lb

10. 52 oz = $3\frac{1}{4}$ lb

11. 24 oz = $1\frac{1}{2}$ lb

12. 76 oz = $4\frac{3}{4}$ lb

13. 82 oz = $5\frac{1}{8}$ lb

14. 46 oz = $2\frac{7}{8}$ lb

15. Stretch Your Thinking List three different real world situations in which a line plot would be the best choice to organize and display the data.

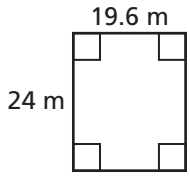
Possible answer: the number of video games owned by each class member; the number of wins for each team in a league; the ages, in years, of all of the United States women's gymnastic team members

8-8 Homework

Name _____ Date _____

Find the perimeter and the area of the rectangle.

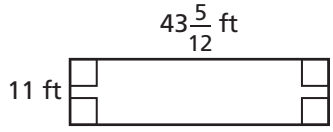
1.



$P =$ 87.2 m

$A =$ 470.4 sq m

2.

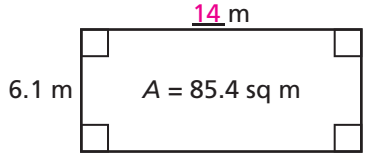


$P =$ $108\frac{5}{6}$ ft

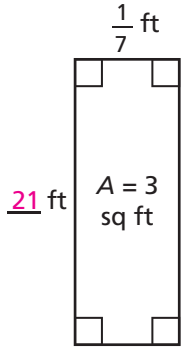
$A =$ $477\frac{7}{12}$ sq ft

Find the side length of the rectangle.

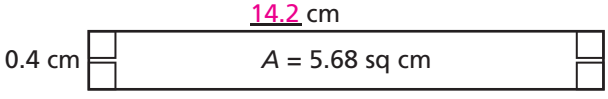
3.



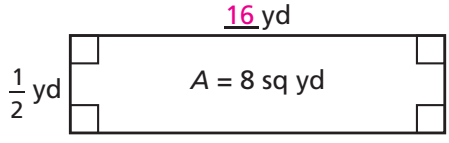
4.



5.



6.



Solve.

7. Gerard ran out of tile for his patio. The width of the remaining area is $2\frac{2}{9}$ feet. The length of the remaining area is 7 feet. How much does Gerard have left to tile?

$15\frac{5}{9}$ sq ft

8. Kyra is building a dollhouse. The carpet for the bedroom is 27 square inches. The length of the bedroom is 6 inches. How long is the width?

4.5 inches

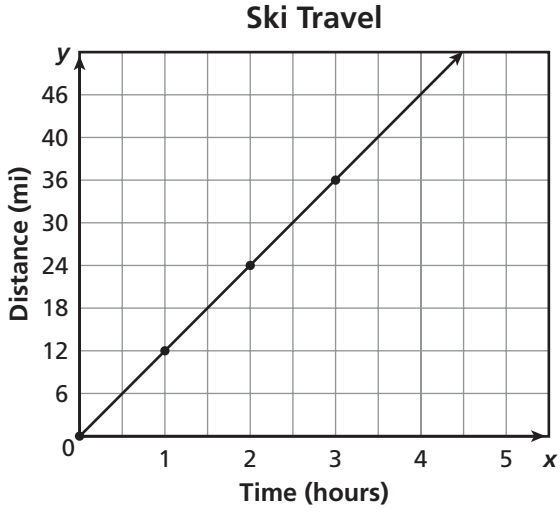
Name _____ Date _____

Remembering

The graph shown represents a skier traveling at a constant speed.

1. The points on the graph represent four ordered (x, y) pairs. Write the ordered pairs.

(0, 0) (1, 12) (2, 24) (3, 36)



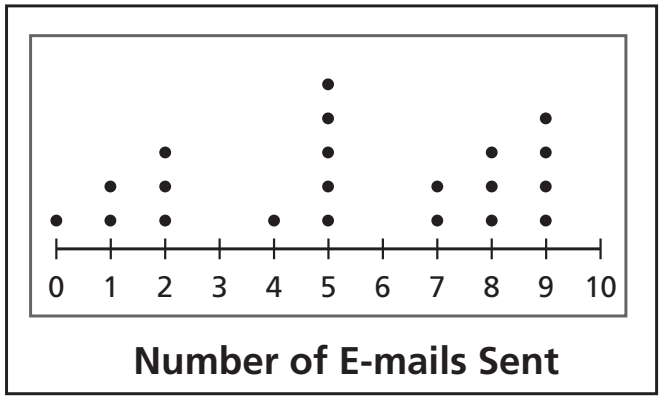
2. Complete the table to show the relationship that time and distance share.

Time (hours)	0	1	2	3
Distance (miles)	0	12	24	36

3. At what constant rate of speed was the skier traveling? Explain how you know.

12 mph; Sample explanation: The graph passes through (1 hour, 12 miles).

4. Dayna surveyed her classmates to find out how many e-mails they send per day. Then, she drew this line plot with the data. Use the line plot to answer questions about the e-mails sent.



a. How many classmates were surveyed?

21

b. How many classmates sent fewer than 5 e-mails?

7

c. How many classmates sent at least 7 e-mails?

9

5. Stretch Your Thinking Find the fractional side lengths of a rectangle that has a perimeter of $64\frac{5}{6}$ inches. Then find the area of the rectangle.

Possible answer: $20\frac{3}{4}$ in. by $11\frac{2}{3}$ in.; A = $242\frac{1}{12}$ sq in.

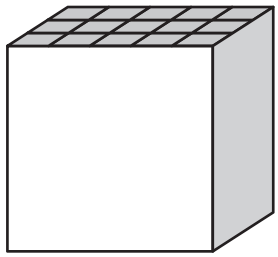
8-9

Homework

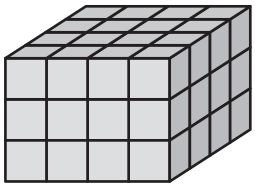
Name _____ Date _____

1. Alison had a box in the shape of a cube. She decided to use centimeter cubes to find the volume of the box. It took 75 centimeter cubes to fill the box with no gaps. What was the volume of the box?

75 cubic cm

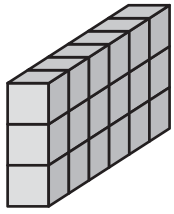


Find the number of unit cubes and the volume.

2. 

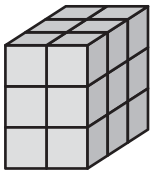
Number of unit cubes: 48

Volume: 48 cubic units

3. 

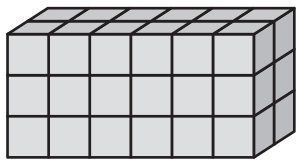
Number of unit cubes: 18

Volume: 18 cubic units

4. 

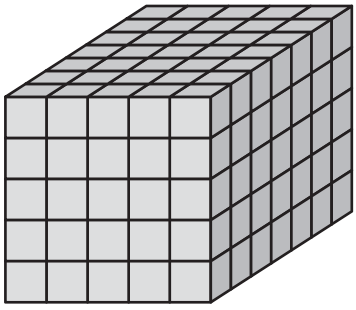
Number of unit cubes: 18

Volume: 18 cubic units

5. 

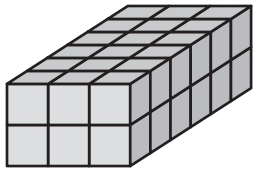
Number of unit cubes: 36

Volume: 36 cubic units

6. 

Number of unit cubes: 175

Volume: 175 cubic units

7. 

Number of unit cubes: 36

Volume: 36 cubic units

Name _____ Date _____

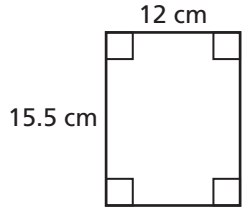
Remembering

Write the computation in words. Answers may vary.

1. $4.5 \div 0.5 + 0.1$ Divide 4.5 by 0.5 and then add 0.1.
2. $6 \div \frac{1}{6}$ Divide 6 by $\frac{1}{6}$.
3. $4 \cdot (5 - 2)$ Multiply the difference of 5 and 2 by 4.
4. $11 - c$ Subtract c from 11.

Find the perimeter and the area of the rectangle.

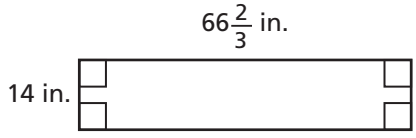
5.



$P =$ 55 cm

$A =$ 186 sq cm

6.



$P =$ $161\frac{1}{3}$ in.

$A =$ $933\frac{1}{3}$ sq in.

7. **Stretch Your Thinking** Draw a sketch to show two figures that have the same number of unit cubes that look different from each other.

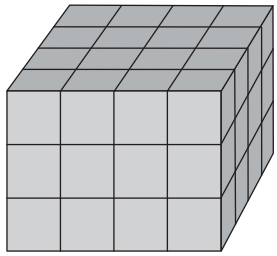
Drawings will vary.

Check students' drawings.

8-10 Homework

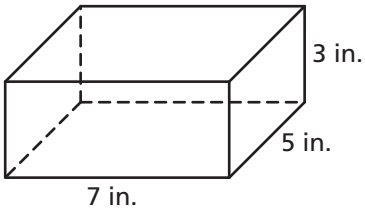
Name _____ Date _____

Use the prism on the right to answer the questions.

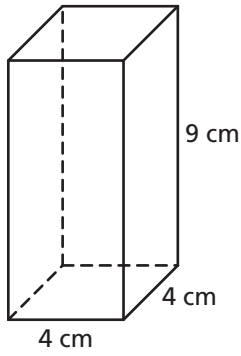


1. How many cubes are in 1 layer? 16
2. How many layers are in the prism? 3
3. Write a multiplication expression for the volume. $(4 \times 4) \times 3$
4. What is the volume of the prism? 48 cubic units

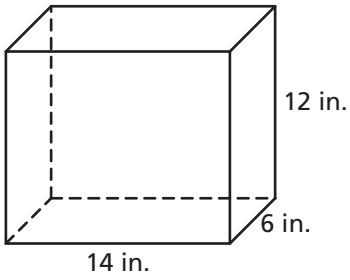
Find the volume.

5. 

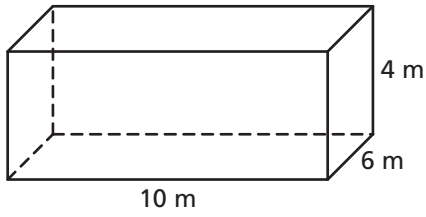
Volume: 105 cu in.

6. 

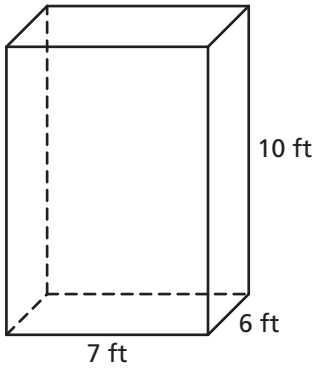
Volume: 144 cu cm

7. 

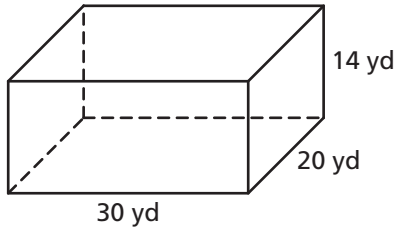
Volume: 1,008 cu in.

8. 

Volume: 240 cu m

9. 

Volume: 420 cu ft

10. 

Volume: 8,400 cu yd

Name _____ Date _____

Remembering

Solve. Follow the Order of Operations.

1. $21 - 6 + 3 - 6$

12

2. $(7.9 - 5.1) \cdot (0.2 + 0.8)$

2.8

3. $6 \cdot 10 \div 5$

12

4. $\frac{1}{5} \cdot \frac{1}{5} \div \frac{1}{5}$

$\frac{1}{5}$

5. $(2\frac{3}{8} - \frac{1}{4}) \times \frac{1}{8}$

$\frac{17}{64}$

6. $\frac{5}{8} - 3 \cdot \frac{1}{16}$

$\frac{7}{16}$

7. $16 \div 0.2 + 15 \div 0.03$

580

8. $64 \div (6.6 + 1.4) \cdot 2$

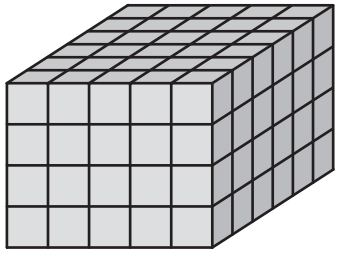
16

9. $0.7 - 0.9 \div 3 + 0.6$

1

Find the number of unit cubes and the volume.

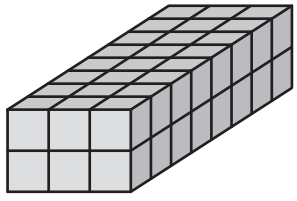
10.



Number of unit cubes: 120

Volume: 120 cubic units

11.



Number of unit cubes: 48

Volume: 48 cubic units

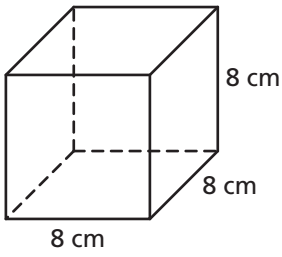
12. Stretch Your Thinking I'm a figure with six layers. Each of my layers is the same. My bottom layer has a perimeter of 28 units, and my volume is between 200 and 300 cubic units. What is my volume?

Possible dimensions: $9 \times 5 \times 6 = 270$ cu. units

Name _____ Date _____

Write a numerical expression for the volume. Then calculate the volume.

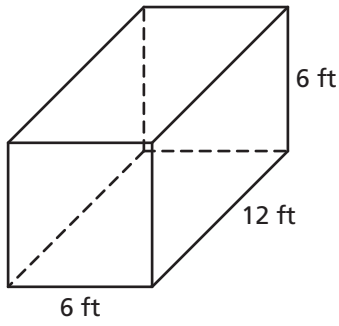
1.



Expression: 8 × 8 × 8

Volume: 512 cu cm

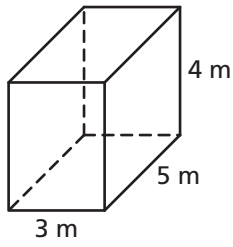
2.



Expression: 6 × 12 × 6

Volume: 432 cu ft

3.



Expression: 3 × 5 × 4

Volume: 60 cu m

Find the unknown dimension or volume of each rectangular prism.

4. V = 176 cu cm

l = 4 cm

w = 4 cm

h = 11 cm

5. V = 168 cu yd

l = 8 yd

w = 7 yd

h = 3 yd

6. V = 90 cu in.

l = 9 in.

w = 2 in.

h = 5 in.

Write an equation. Then solve. Possible equations are given.

7. Pattie built a rectangular prism with cubes. The base of her prism has 12 centimeter cubes. If her prism was built with 108 centimeter cubes, how many layers does her prism have?

$108 = 12 \times h$; 9 layers

8. Isabella cares for an aquarium that is 6 feet long and has a height of 4 feet. The aquarium needs 72 cubic feet of water to be completely filled. What is the width of the aquarium?

$72 = 6 \times w \times 4$; 3 ft

9. Ray's aquarium is 20 inches long, 20 inches wide, and has a height of 15 inches. Randal's aquarium is 40 inches long, 12 inches wide, and has a height of 12 inches. Whose aquarium has a greater volume? By how much?

$(20 \times 20 \times 15) - (40 \times 12 \times 12) = d$; Ray's; 240 cu in.

8-11 Name _____ Date _____

Remembering

Add or subtract.

1. 0.45 + 0.77 = 1.22

2. 0.4 + 0.08 = 0.48

3. 6.9 − 3.44 = 3.46

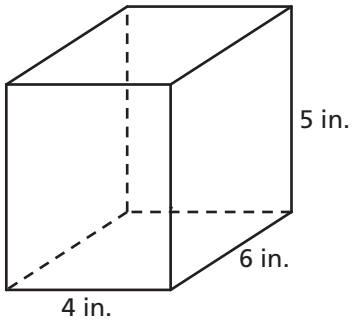
4. 7 − 2.2 = 4.8

5. 0.66 + 0.96 = 1.62

6. 5.7 − 0.9 = 4.8

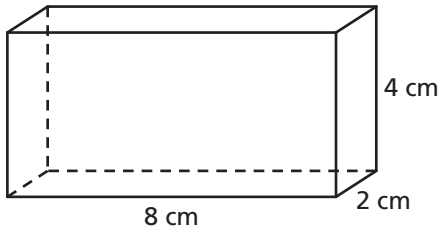
Find the volume.

7.



Volume: 120 cu in.

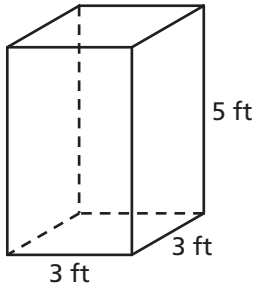
8.



Volume: 64 cu cm

9. Stretch Your Thinking Give the dimensions of a crate that could be used to ship 6 of the boxes below. Allow for some air space between the boxes so they can fit in the crate.

Possible dimensions: 9.25 ft by 6.25 ft by 5.25 ft



8-12

Homework

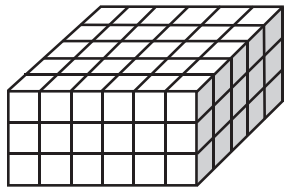
Name _____ Date _____

For each question, write whether you would measure for length, area, or volume.

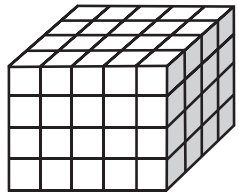
1. the amount of space inside a moving van volume
2. the number of tiles needed to cover a bathroom floor area
3. the distance from a porch to a tree length
4. the amount of water a tank holds volume
5. the height of a flagpole length

Solve.

6. A box is 5 inches long, 4 inches wide, and 1 inch deep. How much space is inside the box?
   20 cu in.
7. Aponi built a toy chest for her niece. It has a volume of 12 cubic feet. The chest is 3 feet long and 2 feet wide. How deep is it?
   2 ft
8. The rug in Alan's room has an area of 18 square feet. He is planning to buy another rug that is twice as long and twice as wide. What is the area of the new rug?
   72 sq ft
9. Each drawer in Monique's nightstand has a volume of 6 cubic decimeters. Each drawer in her dresser is twice as long, twice as wide, and twice as deep. What is the volume of one of Monique's dresser drawers?
   48 cu dm
10. Fong and Daphne built these structures. Who used more cubes? How many more?
    Fong; 10 more



Fong



Daphne

8-12 Name _____ Date _____

Remembering

Solve.

1. 3.8 × 5.4 = 20.52

2. 0.30 × 6.7 = 2.01

3. 3.3 × 0.78 = 2.574

4. 0.04 × 7.3 = 0.292

5. 0.6 × 5.14 = 3.084

6. 8.3 × 2.8 = 23.24

Find the unknown dimension or volume of each rectangular prism.

7. $V =$ 252 cu cm
$l = 7$ cm
$w = 4$ cm
$h = 9$ cm

8. $V = 200$ cu yd
$l =$ 8 yd
$w = 5$ yd
$h = 5$ yd

9. $V = 160$ cu in.
$l = 10$ in.
$w =$ 4 in.
$h = 4$ in.

10. $V =$ 480 cu cm
$l = 10$ cm
$w = 8$ cm
$h = 6$ cm

11. $V = 297$ cu m
$l =$ 11 m
$w = 9$ m
$h = 3$ m

12. $V = 126$ cu in.
$l = 9$ in.
$w =$ 2 in.
$h = 7$ in.

13. Stretch Your Thinking Give one real world example for measuring each of the following: perimeter, area, volume.

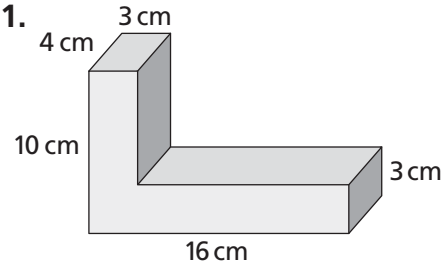
Possible answers: the amount of fencing to go around a play area; the amount of wood flooring to buy to cover your living room; the amount of water to put into a fish tank

8-13 Homework

Name _____ Date _____

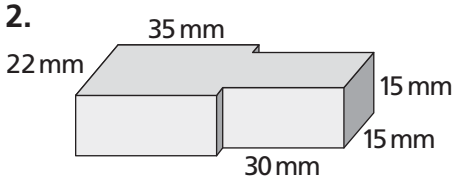
Find the volume of each composite solid figure.

1.



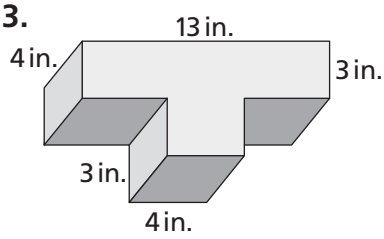
276 cubic cm

2.



18,300 cubic mm

3.



204 cubic in.

4. The exterior of a refrigerator is shaped like a rectangular prism, and measures $2\frac{2}{3}$ feet wide by $5\frac{1}{2}$ feet high by $2\frac{1}{2}$ feet deep. What amount of space does the refrigerator take up?

$36\frac{2}{3}$ cubic feet

5. In the space below, draw a composite solid of your own design that is made up of two prisms. Write the dimensions of your design, and then calculate its volume.

Drawing may vary. Check students' drawings and answers.

8-13 Name Date

Remembering

Divide

1. $0.7\overline{)49}$ = 70

2. $0.05\overline{)50}$ = 1,000

3. $0.8\overline{)0.64}$ = 0.8

4. $0.06\overline{)36}$ = 600

5. $0.3\overline{)939.6}$ = 3,132

6. $0.06\overline{)27.3}$ = 455

Solve.

7. A fish tank is 20 feet long, 12 feet wide, and 10 feet deep. What is the volume of the fish tank?

2,400 cubic feet

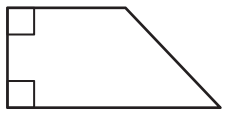
8. Stretch Your Thinking Draw a composite solid in the space below using two different rectangular prisms. Label the length and width using fractions of units. The figures do not need to be to scale. Find the volume of the figure.

Drawings will vary. Check students' drawings.

Name _____ Date _____

Circle all the names that describe the shape.

1.

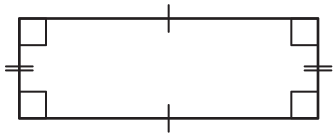


quadrilateral trapezoid

parallelogram rhombus

rectangle square

2.

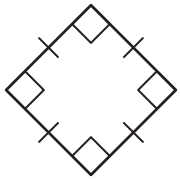


quadrilateral trapezoid

parallelogram rhombus

rectangle square

3.

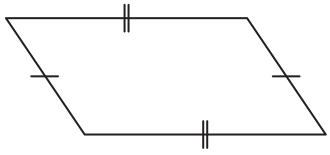


quadrilateral trapezoid

parallelogram rhombus

rectangle square

4.



quadrilateral trapezoid

parallelogram rhombus

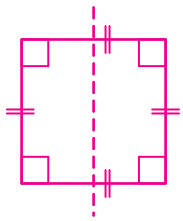
rectangle square

Sketch a shape that fits the description, if possible.

Sketches will vary. Samples are given.

5. a trapezoid with two right angles

6. a rhombus with a line of symmetry



7. a parallelogram with a right angle that is not a rectangle

not possible

8. a rectangle with opposite sides that are not congruent

not possible

8-14 Name _____ Date _____

Remembering

Add or subtract.

1. $\frac{5}{6} - \frac{1}{3} = \frac{1}{2}$

2. $\frac{3}{4} - \frac{5}{8} = \frac{1}{8}$

3. $\frac{3}{16} - \frac{1}{8} = \frac{1}{16}$

4. $\frac{5}{9} + \frac{1}{3} = \frac{8}{9}$

5. $\frac{3}{5} + \frac{1}{4} = \frac{17}{20}$

6. $\frac{1}{6} + \frac{2}{3} = \frac{5}{6}$

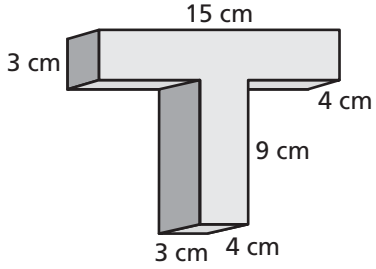
7. $6 - 3\frac{2}{5} = 2\frac{3}{5}$

8. $1\frac{4}{9} + 4\frac{2}{3} = 6\frac{1}{9}$

9. $6\frac{4}{5} - 2\frac{1}{10} = 4\frac{7}{10}$

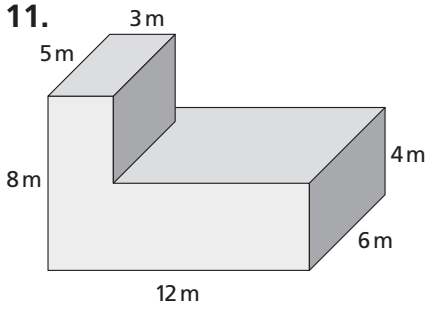
Find the volume of each composite solid.

10.



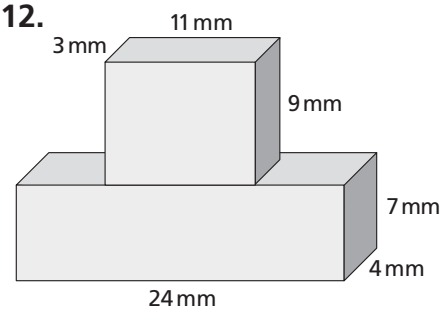
288 cubic cm

11.



348 cubic m

12.



969 cubic mm

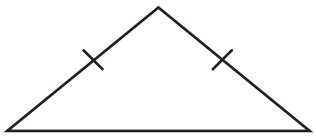
13. **Stretch Your Thinking** Explain why a square is always a rectangle but a rectangle is not always a square.

Possible answer: A square is a rectangle because opposite sides are parallel and the same length, and its angles are 90°. A rectangle is not always a square because all of its sides do not have to be the same length.

Name _____ Date _____

Circle all the names that describe the shape.

1.

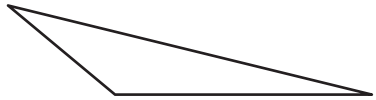


acute scalene

right (isosceles)

(obtuse) equilateral

2.

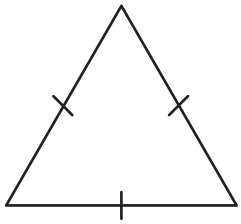


acute (scalene)

right isosceles

(obtuse) equilateral

3.

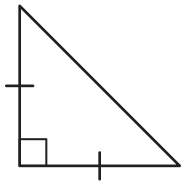


(acute) scalene

right (isosceles)

obtuse (equilateral)

4.



acute scalene

(right) (isosceles)

obtuse equilateral

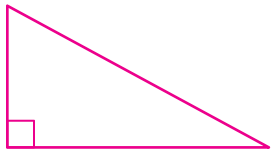
Sketch a shape that fits the description, if possible.

Sketches will vary. Samples are given.

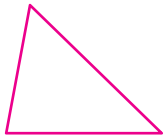
5. a triangle with two obtuse angles

not possible

6. a right scalene triangle



7. an acute triangle that is not equilateral



8. a scalene triangle with a line of symmetry

not possible

Name _____ Date _____

Remembering

Solve.

1. $\frac{1}{5} \div 6 =$ $\frac{1}{30}$

2. $7 \div \frac{1}{4} =$ 28

3. $\frac{6}{7} \cdot \frac{1}{5} =$ $\frac{6}{35}$

4. $\frac{1}{10} \div 5 =$ $\frac{1}{50}$

5. $4 \cdot \frac{1}{5} =$ $\frac{4}{5}$

6. $\frac{1}{3} \cdot 14 =$ $4\frac{2}{3}$

Find each product by first rewriting each mixed number as a fraction.

7. $\frac{3}{5} \cdot 1\frac{1}{6} =$ $\frac{3}{5} \cdot \frac{7}{6} = \frac{21}{30} = \frac{7}{10}$

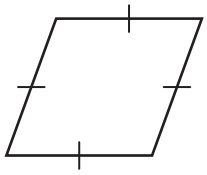
8. $2\frac{2}{3} \cdot 6 =$ $\frac{8}{3} \cdot \frac{6}{1} = \frac{48}{3} = 16$

9. $4\frac{5}{6} \cdot 2\frac{1}{5} =$ $\frac{29}{6} \cdot \frac{11}{5} = \frac{319}{30} = 10\frac{19}{30}$

10. $4\frac{1}{4} \cdot \frac{3}{8} =$ $\frac{17}{4} \cdot \frac{3}{8} = \frac{51}{32} = 1\frac{19}{32}$

Circle all the names that describe the shape.

11.

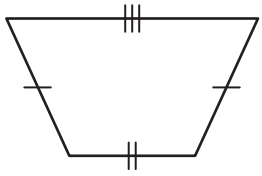


(quadrilateral) trapezoid

(parallelogram) (rhombus)

rectangle square

12.



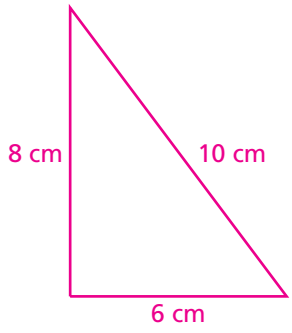
(quadrilateral) (trapezoid)

parallelogram rhombus

rectangle square

13. **Stretch Your Thinking** The sum of the lengths of any two sides of a triangle must be greater than the length of the third side. List three side lengths that will form a triangle. Use a ruler and draw the triangle.

Possible answer: 6 cm, 8 cm, 10 cm.



8-16

Homework

Name Date

Draw a shape that fits the description. Mark all congruent segments and right angles.

Drawings will vary. Check students' work.

1. an open shape made up of one or more curves

2. a concave quadrilateral with an acute angle and exactly two congruent sides

3. a closed shape that is not a polygon made entirely of segments

4. a convex pentagon with two parallel sides and two perpendicular sides

5. a concave hexagon with two pairs of congruent sides

6. a quadrilateral with four congruent sides that is not regular

Name _____ Date _____

Remembering

Simplify. Follow the Order of Operations.

1. $61 - 300 \div 6$

11

2. $0.8 \div (0.09 - 0.07)$

40

3. $4 \cdot 9 - 12 \div 3$

32

4. $(\frac{5}{12} + \frac{3}{4}) \cdot 12$

14

5. $44 + 29 - 13 + 34$

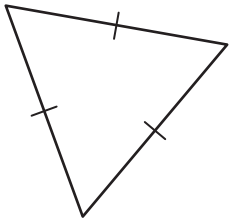
94

6. $100 \div (6 - 2) \cdot 5$

125

Circle all the names that describe the shape.

7.

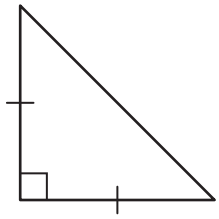


(acute) scalene

right (isosceles)

obtuse (equilateral)

8.



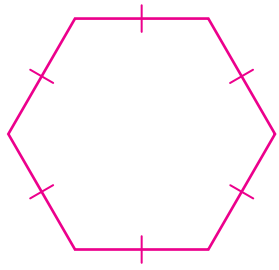
acute scalene

(right) (isosceles)

obtuse equilateral

9. Stretch Your Thinking Write a description of a two-dimensional shape and then draw the shape.

Possible answer: a convex regular hexagon



8-17

Homework

Name _____ Date _____

Solve. Answers and drawings will vary.

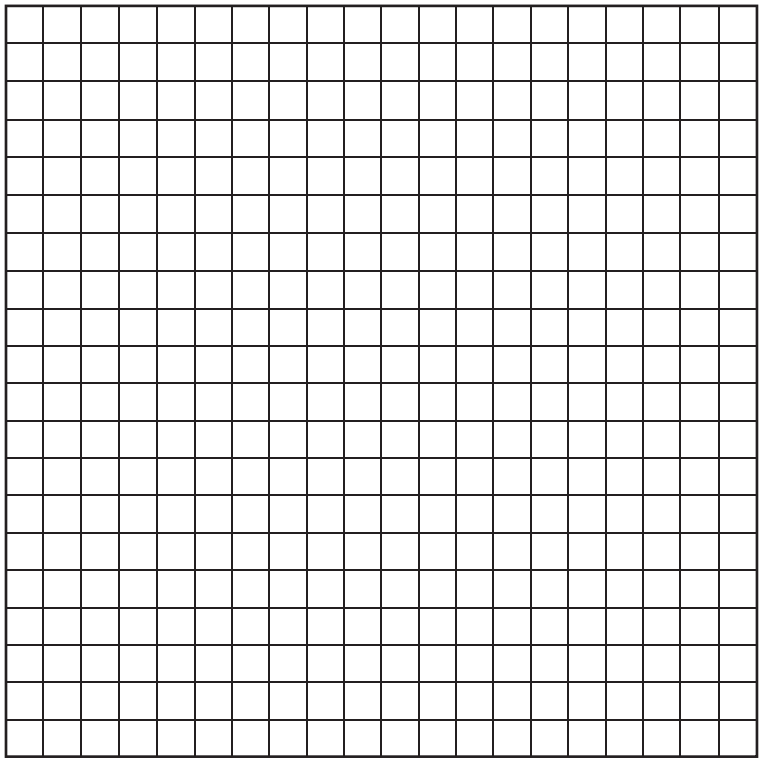
1. On the grid below, draw and label an aquarium shaped like a rectangular prism with a volume of 8,000 cubic inches. (Hint: A cube is a rectangular prism, and $2 \times 2 \times 2 = 8$.)

2. Calculate the perimeter of the top of your aquarium. Then calculate the area of its base.

   $P =$ _____

   $A =$ _____

3. The rectangular prism you drew for Problem 1 is not the only rectangular prism that has a volume of 8,000 cubic inches. Other prisms are possible. On the grid below, use a new color and draw a different rectangular prism that has a volume of 8,000 cubic inches.



8-17 Name _____ Date _____

Remembering

Complete the pattern.

1. $22 \times 10^1 = 22 \times 10 =$ 220

$22 \times 10^2 = 22 \times 100 =$ 2,200

$22 \times 10^3 = 22 \times 1{,}000 =$ 22,000

$22 \times 10^4 = 22 \times 10{,}000 =$ 220,000

2. $412 \times 10^1 =$ 412×10 $= 4{,}120$

$412 \times 10^2 = 412 \times 100 =$ 41,200

$412 \times 10^3 =$ $412 \times 1{,}000$ $= 412{,}000$

$412 \times 10^4 = 412 \times 10{,}000 =$ 4,120,000

3. $56 \times 10^1 =$ 56×10 $= 560$

$56 \times 10^2 =$ 56×100 $= 5{,}600$

$56 \times 10^3 =$ $56 \times 1{,}000$ $= 56{,}000$

$56 \times 10^4 =$ $56 \times 10{,}000$ $= 560{,}000$

4. $8 \times 10^1 = 8 \times 10 =$ 80

$8 \times 10^2 = 8 \times 100 =$ 800

$8 \times 10^3 = 8 \times 1{,}000 =$ 8,000

$8 \times 10^4 = 8 \times 10{,}000 =$ 80,000

Draw a shape that fits the description. Mark all congruent segments and right angles.

Drawings will vary. Check students' work.

5. a triangle with a right angle and exactly two congruent sides

6. a concave octagon with all sides congruent

7. Stretch Your Thinking List the dimensions of two different rectangular prisms in which each has a volume of 6,600 cubic centimeters.

Possible answer: 66 cm × 10 cm × 10 cm;

110 cm × 12 cm × 5 cm