

Math Summer Packet '25

The summer packet is meant to give you a jump start on the year. It is strictly computation. Feel free to look up reminders as needed. It is less than 3 problems a day if you start working on it on June 1st. We will review the packet in class and have a test over these skills within the first two weeks of school.

**You only need to do the
highlighted problems.**

**DO NOT USE A
CALCULATOR**

Adding Decimals

Name _____

Date _____

Find the sum.

1.
$$\begin{array}{r} 14.27 \\ 6.91 \\ + 8.347 \\ \hline \end{array}$$
2.
$$\begin{array}{r} 27.304 \\ 4.72 \\ + 1.61 \\ \hline \end{array}$$
3.
$$\begin{array}{r} 5.0 \\ 2.079 \\ + 41.41 \\ \hline \end{array}$$
4.
$$\begin{array}{r} 8.34 \\ 21.35 \\ + 0.87 \\ \hline \end{array}$$
5.
$$\begin{array}{r} 1.465 \\ 9.208 \\ + 14.36 \\ \hline \end{array}$$
6.
$$\begin{array}{r} 4.014 \\ 0.8 \\ 1.4 \\ + 2.79 \\ \hline \end{array}$$
7.
$$\begin{array}{r} 5.5 \\ 0.55 \\ 0.055 \\ + 55.0 \\ \hline \end{array}$$
8.
$$\begin{array}{r} 21.46 \\ 8.921 \\ 1.46 \\ + 31.976 \\ \hline \end{array}$$
9.
$$\begin{array}{r} 4.215 \\ 17.8231 \\ 4.865 \\ + 97.41 \\ \hline \end{array}$$
10.
$$\begin{array}{r} 5.927 \\ 18.35 \\ 7.917 \\ + 82.43 \\ \hline \end{array}$$
11.
$$\begin{array}{r} 88.49 \\ 293.4 \\ 72.84 \\ + 621.08 \\ \hline \end{array}$$
12.
$$\begin{array}{r} 16.41 \\ 9.835 \\ 91.46 \\ + 8.672 \\ \hline \end{array}$$
13.
$$\begin{array}{r} 89.327 \\ 6.43 \\ 81.6 \\ + 3.915 \\ \hline \end{array}$$
14.
$$\begin{array}{r} 672.15 \\ 897.38 \\ 404.04 \\ + 675.35 \\ \hline \end{array}$$
15.
$$\begin{array}{r} \$269.43 \\ 827.69 \\ 591.63 \\ + 919.86 \\ \hline \end{array}$$

Align and add.

16. $0.4 + 2.05 + 6.1 + 0.406$ _____
17. $0.715 + 6.429 + 3.0307 + 2.8$ _____
18. $0.104 + 8.796 + 6 + 0.3051$ _____
19. $5.492 + 78.04 + 0.376 + 0.541$ _____
20. $8.6 + 7.801 + 5.92 + 15.8$ _____
21. $4 + 18.7 + 91.428 + 8.21$ _____

Play these games.

22. Find the sum of each row and column.
What is the magic sum? _____

4.7	21.15	9.4
16.45	11.75	7.05
14.1	2.35	18.8

23. Find the sum of each row and column.
Then find the sum of these sums.
What is the final sum? _____

6.25	19.35	→
2.72	8.5	→
↓	↓	

Subtracting Decimals

Name _____

Date _____

Find the difference.

1.
$$\begin{array}{r} 8.941 \\ -7.753 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 3.516 \\ -0.309 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 5.289 \\ -1.727 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 6.539 \\ -4.999 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 4.291 \\ -3.478 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 23.62 \\ -19.427 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 81.815 \\ -7.24 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 62.397 \\ -15.6 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 74.223 \\ -7.598 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 46.82 \\ -7.915 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 82.679 \\ -19.493 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 67.665 \\ -9.879 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 41.23 \\ -8.765 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 92.5 \\ -7.356 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 19.42 \\ -7.691 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 5.1 \\ -0.765 \\ \hline \end{array}$$

17.
$$\begin{array}{r} 8.1 \\ -3.472 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 15 \\ -11.707 \\ \hline \end{array}$$

19.
$$\begin{array}{r} 24 \\ -3.869 \\ \hline \end{array}$$

20.
$$\begin{array}{r} 5 \\ -0.56 \\ \hline \end{array}$$

Align and subtract.

21. $6.72 - 1.7$ _____

22. $12 - 9.72$ _____

23. $207.1 - 11.4$ _____

24. $53.7 - 9.62$ _____

25. $16.45 - 11.9$ _____

26. $9.48 - 5.691$ _____

For each purchase, find the change from \$100.

27. a chair at \$62.56 _____

28. a bicycle at \$79.98 _____

29. a coat at \$87.75 _____

30. a watch at \$32.43 _____

31. a stereo at \$69.37 _____

32. a radio at \$36.29 _____

Name _____

Multiply Decimals

Find the product. Show your work.

Remember:

Multiply as you would with whole numbers.

Count the number of decimal places in both factors.

Mark off the same number of decimal places in the product.

1.
$$\begin{array}{r} 3.14 \\ \times 12 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 0.406 \\ \times 0.62 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 7.99 \\ \times 0.11 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 0.43 \\ \times 73 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 2.75 \\ \times 2.5 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 0.81 \\ \times 22 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 1.13 \\ \times 0.8 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 2.01 \\ \times 38 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 0.345 \\ \times 1.2 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 92.15 \\ \times 0.33 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 0.346 \\ \times 0.81 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 4.13 \\ \times 10 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 7.1 \\ \times 1.7 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 0.123 \\ \times 25 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 4.01 \\ \times 8.1 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 0.111 \\ \times 3.3 \\ \hline \end{array}$$

17.
$$\begin{array}{r} 0.35 \\ \times 24 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 7.54 \\ \times 0.7 \\ \hline \end{array}$$

19.
$$\begin{array}{r} 6.32 \\ \times 4 \\ \hline \end{array}$$

20.
$$\begin{array}{r} 1.41 \\ \times 55 \\ \hline \end{array}$$

21.
$$\begin{array}{r} 0.60 \\ \times 2.4 \\ \hline \end{array}$$

22.
$$\begin{array}{r} 9.01 \\ \times 5 \\ \hline \end{array}$$

23.
$$\begin{array}{r} 47.13 \\ \times 0.2 \\ \hline \end{array}$$

24.
$$\begin{array}{r} 3.08 \\ \times 1.3 \\ \hline \end{array}$$

25.
$$\begin{array}{r} 0.414 \\ \times 65 \\ \hline \end{array}$$

26.
$$\begin{array}{r} 1.98 \\ \times 45 \\ \hline \end{array}$$

Dividing a Decimal by a Whole Number

Name _____

Date _____

Place a decimal point in each quotient. Insert zeros where necessary.

1. $28 \overline{)15.68}$

2. $59 \overline{)2.183}$

3. $43 \overline{)0.3268}$

4. $85 \overline{)4.5645}$

5. $402 \overline{)2331.6}$

6. $742 \overline{)4.7488}$

7. $614 \overline{)11.666}$

8. $593 \overline{)2.8464}$

Divide using short division.

9. $4 \overline{)0.0136}$

10. $9 \overline{)0.4275}$

11. $8 \overline{)0.6144}$

12. $2 \overline{)5.272}$

13. $8 \overline{)0.5184}$

14. $5 \overline{)0.2135}$

15. $3 \overline{)0.2613}$

16. $7 \overline{)5.971}$

Find the quotient. Place zeros where necessary.

17. $43 \overline{)196.08}$

18. $69 \overline{)180.09}$

19. $42 \overline{)27.804}$

20. $53 \overline{)29.468}$

21. $95 \overline{)39.995}$

22. $45 \overline{)0.28935}$

23. $64 \overline{)0.46336}$

24. $77 \overline{)4.8048}$

Dividing by a Decimal (Zero in the Quotient)

Name _____

Date _____

Remember:

1. $0.0168 \div 5.6 = ?$

$$\begin{array}{r} 0.003 \\ 5.6 \overline{)0.0168} \\ \underline{168} \\ 0 \end{array}$$

2. $3 \div 0.075 = ?$

$$\begin{array}{r} 40. \\ 0.075 \overline{)3.000} \\ \underline{300} \\ 0 \end{array}$$

Find each quotient. Place zeros where necessary.

1. $0.124 \overline{)31}$

2. $0.65 \overline{)91}$

3. $0.216 \overline{)54}$

4. $0.36 \overline{)18}$

5. $10.8 \overline{)0.027}$

6. $1.24 \overline{)9.3}$

7. $2.08 \overline{)5.2}$

8. $0.48 \overline{)0.24}$

Divide. Round each quotient to the nearest hundredth.

9. $0.9 \overline{)0.921}$

10. $0.7 \overline{)0.27}$

11. $0.6 \overline{)3.9}$

12. $0.4 \overline{)8.7}$

13. $2.7 \overline{)4.73}$

14. $0.19 \overline{)0.4216}$

15. $0.43 \overline{)0.72731}$

16. $1.1 \overline{)5.628}$

17. $0.21 \overline{)1.7125}$

Solve.

18. Bianca earned \$399.60 after working for 18.5 hours.
How much did she earn for one hour?

19. A boy ran 0.546 mile in 4.56 minutes. What decimal part of
a mile did he run in one minute?

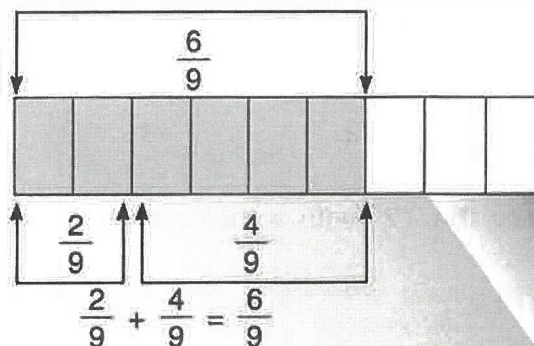
Adding Fractions

To add fractions with *like* denominators:

- Add the *numerators*.
- Write the sum over the common denominator.
- Express in lowest terms.

Add: $\frac{2}{9} + \frac{4}{9} = ?$

$$\frac{2}{9} + \frac{4}{9} = \frac{2+4}{9} = \frac{6}{9} = \frac{2}{3} \text{ (lowest terms)}$$



To add fractions with *unlike* denominators:

- Find the LCD.
- Rewrite the fractions with a common denominator.
- Add and express in lowest terms.

Add: $\frac{7}{10} + \frac{5}{6} = ?$

Find the LCD of $\frac{7}{10}$ and $\frac{5}{6}$:

Multiples of 10: 10, 20, 30, 40, ...

Multiples of 6: 6, 12, 18, 24, 30, 36, ...

LCD is 30.

Rewrite the fractions using the LCD of 30 and add.

$$\begin{array}{r} \frac{7}{10} = \frac{21}{30} \\ + \frac{5}{6} = + \frac{25}{30} \\ \hline \frac{46}{30} \end{array}$$

$$= 1 \frac{16}{30} = 1 \frac{8}{15} \text{ (lowest terms)}$$

Always express the answer in simplest form or lowest terms.

Find the sum. Express the answer in lowest terms or simplest form.

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

2. $\frac{7}{16} + \frac{5}{16}$

3. $\frac{3}{10} + \frac{11}{10}$

4. $\frac{5}{6} + \frac{5}{6}$

5. $\frac{8}{15} + \frac{7}{15}$

6. $\frac{3}{7} + \frac{9}{7}$

7. $\frac{13}{10} + \frac{7}{10}$

8. $\frac{9}{14} + \frac{17}{14}$

Find the LCD for each set of fractions.

9. $\frac{2}{3}, \frac{1}{12}$

10. $\frac{1}{4}, \frac{5}{8}$

11. $\frac{3}{7}, \frac{2}{3}$

12. $\frac{1}{3}, \frac{5}{8}$

13. $\frac{2}{5}, \frac{3}{10}$

14. $\frac{3}{5}, \frac{5}{6}$

15. $\frac{1}{2}, \frac{5}{8}, \frac{2}{3}$

16. $\frac{1}{4}, \frac{2}{5}, \frac{4}{15}$

17. $\frac{2}{5}, \frac{3}{8}, \frac{7}{10}$

18. $\frac{1}{6}, \frac{5}{9}, \frac{7}{18}$

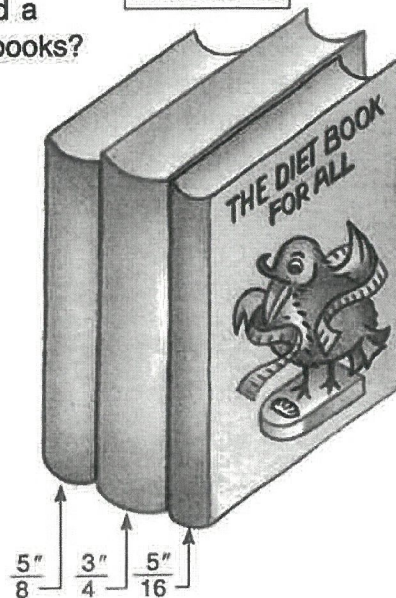
Find the sum. Write your answer in lowest terms or simplest form.

19. $\frac{5}{9} + \frac{1}{3}$ 20. $\frac{2}{3} + \frac{11}{15}$ 21. $\frac{5}{8} + \frac{7}{24}$ 22. $\frac{6}{12} + \frac{4}{6}$ 23. $\frac{1}{3} + \frac{3}{16}$
 24. $\frac{7}{8} + \frac{2}{5}$ 25. $\frac{2}{3} + \frac{3}{4}$ 26. $\frac{8}{9} + \frac{1}{8}$ 27. $\frac{1}{2} + \frac{4}{9}$ 28. $\frac{4}{5} + \frac{1}{4}$
 29. $\frac{5}{8} + \frac{1}{3}$ 30. $\frac{5}{6} + \frac{4}{5}$ 31. $\frac{7}{8} + \frac{3}{10}$ 32. $\frac{9}{10} + \frac{4}{15}$ 33. $\frac{4}{9} + \frac{5}{12}$
 34. $\frac{1}{15}$ 35. $\frac{2}{7}$ 36. $\frac{1}{3}$ 37. $\frac{1}{6}$ 38. $\frac{5}{12}$
 $\frac{7}{10}$ $\frac{5}{14}$ $\frac{3}{5}$ $\frac{4}{9}$ $\frac{1}{18}$
 $+\frac{2}{15}$ $+\frac{3}{7}$ $+\frac{4}{5}$ $+\frac{1}{3}$ $+\frac{5}{6}$

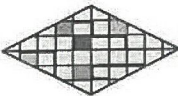
Solve.

39. If one book is $\frac{5}{8}$ inch thick, a second is $\frac{3}{4}$ inch thick, and a third is $\frac{5}{16}$ inch thick, what will be the width of the three books?
 40. A high jump bar is set at 61 inches. The bar was raised $\frac{1}{2}$ inch two times. How high is the bar set?
 41. A shuttle astronaut worked 1 hour repairing a satellite on the first day. On each of the next two days he worked $\frac{5}{6}$ hour repairing it. How long did the astronaut work on the satellite?
 42. In preparing a fruit tray a chef used $\frac{3}{4}$ lb of strawberries, 1 lb of grapes, and $\frac{7}{8}$ lb of bananas. How many pounds of fruit did the chef use?
 43. A frog leaped $\frac{2}{3}$ yd, $\frac{3}{4}$ yd, and $\frac{5}{6}$ yd. A different frog leaped a total of $2\frac{1}{2}$ yd. Which frog leaped farther?

Exercise 39



MENTAL



MATH

Write $<$, $=$, or $>$ to make a true sentence.

44. $\frac{1}{8} + \frac{5}{8} \underline{\quad ? \quad} 1$ 45. $\frac{1}{6} + \frac{5}{6} \underline{\quad ? \quad} 1$ 46. $\frac{1}{10} + \frac{2}{5} + \frac{3}{10} \underline{\quad ? \quad} \frac{4}{10} + \frac{2}{5}$
 47. $\frac{1}{10} + \frac{2}{5} + \frac{3}{10} \underline{\quad ? \quad} \frac{7}{10}$ 48. $\frac{7}{24} + \frac{5}{8} \underline{\quad ? \quad} \frac{7}{24}$ 49. $\frac{3}{4} + \frac{1}{2} + \frac{1}{4} \underline{\quad ? \quad} 1\frac{3}{4}$
 50. $\frac{3}{10} + \frac{9}{20} \underline{\quad ? \quad} \frac{9}{20}$ 51. $\frac{3}{8} + \frac{1}{8} \underline{\quad ? \quad} \frac{1}{2}$ 52. $\frac{2}{9} + \frac{1}{3} + \frac{5}{9} \underline{\quad ? \quad} \frac{7}{9}$

Subtracting Fractions

Name _____

Date _____

Find the difference. Express the answer in simplest form.

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

2. $\frac{4}{9} - \frac{1}{9} =$ _____

3. $\frac{8}{11} - \frac{5}{11} =$ _____

4. $\frac{13}{15} - \frac{7}{15} =$ _____

5. $\frac{17}{20} - \frac{14}{20} =$ _____

6. $\frac{18}{25} - \frac{13}{25} =$ _____

7.
$$\begin{array}{r} \frac{3}{4} \\ - \frac{5}{8} \\ \hline \end{array}$$

8.
$$\begin{array}{r} \frac{7}{10} \\ - \frac{1}{5} \\ \hline \end{array}$$

9.
$$\begin{array}{r} \frac{7}{12} \\ - \frac{1}{4} \\ \hline \end{array}$$

10.
$$\begin{array}{r} \frac{7}{9} \\ - \frac{1}{3} \\ \hline \end{array}$$

11.
$$\begin{array}{r} \frac{2}{3} \\ - \frac{1}{2} \\ \hline \end{array}$$

12.
$$\begin{array}{r} \frac{5}{6} \\ - \frac{4}{5} \\ \hline \end{array}$$

13.
$$\begin{array}{r} \frac{3}{5} \\ - \frac{1}{4} \\ \hline \end{array}$$

14.
$$\begin{array}{r} \frac{9}{10} \\ - \frac{5}{6} \\ \hline \end{array}$$

15.
$$\begin{array}{r} \frac{1}{2} \\ - \frac{2}{5} \\ \hline \end{array}$$

16.
$$\begin{array}{r} \frac{7}{10} \\ - \frac{5}{8} \\ \hline \end{array}$$

17.
$$\begin{array}{r} \frac{8}{9} \\ - \frac{5}{6} \\ \hline \end{array}$$

18.
$$\begin{array}{r} \frac{2}{3} \\ - \frac{5}{8} \\ \hline \end{array}$$

Write $<$, $=$, or $>$ to make a true sentence.

19. $\frac{3}{4} - \frac{1}{2}$ _____ $\frac{1}{4}$

20. $\frac{5}{6} - \frac{1}{3}$ _____ $\frac{1}{6}$

21. $\frac{5}{6} - \frac{2}{3}$ _____ $\frac{1}{3}$

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

23. $\frac{5}{8} - \frac{1}{3}$ _____ $\frac{1}{3}$

24. $\frac{5}{7} - \frac{1}{3}$ _____ $\frac{2}{7}$

25. $\frac{5}{8} - \frac{1}{2}$ _____ $\frac{1}{4}$

26. $\frac{2}{3} - \frac{1}{6}$ _____ $\frac{1}{2}$

27. $\frac{1}{2} - \frac{1}{3}$ _____ $\frac{1}{6}$

28. $\frac{5}{7} - \frac{1}{2}$ _____ $\frac{2}{7}$

Compute. Write the answer in simplest form.

29. $\left(\frac{1}{3} + \frac{2}{5}\right) - \frac{1}{2} =$ _____

30. $\left(\frac{5}{6} + \frac{1}{3}\right) - \frac{1}{4} =$ _____

31. $\left(\frac{1}{8} + \frac{1}{4}\right) - \frac{1}{3} =$ _____

32. $\left(\frac{5}{12} + \frac{1}{6}\right) - \frac{3}{8} =$ _____

33. $\left(\frac{1}{2} + \frac{5}{6}\right) - \frac{1}{3} =$ _____

34. $\left(\frac{1}{8} + \frac{1}{3}\right) - \frac{1}{12} =$ _____

35. $\left(\frac{2}{5} + \frac{1}{8}\right) - \frac{3}{20} =$ _____

36. $\left(\frac{4}{9} + \frac{1}{6}\right) - \frac{5}{12} =$ _____

Add Mixed Numbers

Name _____

Date _____

Add: $2\frac{4}{5} + 3\frac{2}{5}$

- Add the fractions.
- Add the whole numbers.
- Simplify.

$$\begin{array}{r} 2\frac{4}{5} \\ + 3\frac{2}{5} \\ \hline 5\frac{6}{5} = 6\frac{1}{5} \end{array}$$

Add: $2\frac{4}{10} + 3\frac{2}{5}$

LCD: 10

- Rename each fraction.
- Add.
- Simplify.

$$\begin{array}{r} 2\frac{4}{10} + 3\frac{4}{10} \\ 2\frac{4}{10} + 3\frac{4}{10} = 5\frac{8}{10} \\ 5\frac{8}{10} = 5\frac{4}{5} \end{array}$$

Complete the addition.

1. $9\frac{1}{4} = 9\frac{\quad}{20}$
 $+ 1\frac{3}{5} = 1\frac{\quad}{20}$
 $\hline 10\frac{\quad}{20}$

2. $12\frac{4}{7}$
 $+ 3\frac{3}{7}$
 $\hline 15\frac{\quad}{7} = \underline{\hspace{2cm}}$

3. $10\frac{5}{18} = 10\frac{\quad}{18}$
 $+ 11\frac{1}{6} = 11\frac{\quad}{18}$
 $\hline 21\frac{\quad}{18} = \underline{\hspace{2cm}}$

Add. Estimate to help.

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

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

6. $4\frac{5}{6}$
 $+ 6\frac{7}{18}$
 $\hline$

7. $7\frac{1}{2}$
 $+ 9\frac{1}{4}$
 $\hline$

8. $2\frac{3}{7} + 4 = \underline{\hspace{2cm}}$

9. $8\frac{3}{5} + 7\frac{2}{5} = \underline{\hspace{2cm}}$

10. $5\frac{1}{2} + 4\frac{3}{10} = \underline{\hspace{2cm}}$

11. $15\frac{1}{3} + 10\frac{5}{6} = \underline{\hspace{2cm}}$

12. $12\frac{9}{10} + 1\frac{7}{15} = \underline{\hspace{2cm}}$

13. $1\frac{3}{5} + 3\frac{2}{3} = \underline{\hspace{2cm}}$

14. $3\frac{1}{8} + 6\frac{3}{8} + 2\frac{5}{8} = \underline{\hspace{2cm}}$

15. $8\frac{1}{2} + 9\frac{3}{4} + 2\frac{1}{8} = \underline{\hspace{2cm}}$

16. $5\frac{1}{3} + 7\frac{2}{5} + 3\frac{2}{3} = \underline{\hspace{2cm}}$

17. $6\frac{1}{5} + 1\frac{4}{5} + 5\frac{3}{10} = \underline{\hspace{2cm}}$

18. $2\frac{1}{6} + 1\frac{3}{8} + 8\frac{1}{4} = \underline{\hspace{2cm}}$

19. $1\frac{3}{4} + 2\frac{2}{5} + 3\frac{1}{10} = \underline{\hspace{2cm}}$

Problem Solving Express your answer in simplest form.

20. On a weekend hike, a group walked $5\frac{1}{10}$ miles on Saturday and $4\frac{5}{10}$ miles on Sunday. How many miles did they hike both days? _____

21. Malik rode his bicycle $4\frac{1}{2}$ miles in the morning. In the afternoon he rode $3\frac{3}{4}$ miles. How many miles did he ride in all? _____

Subtract Mixed Numbers

Name _____

Date _____

Subtract: $8\frac{7}{10} - 3\frac{3}{10}$

- Subtract the fractions.
- Subtract the whole numbers.
- Simplify.

$$\begin{array}{r} 8\frac{7}{10} \\ - 3\frac{3}{10} \\ \hline 5\frac{4}{10} = 5\frac{2}{5} \end{array}$$

Subtract: $8\frac{1}{10} - 2\frac{4}{5}$

LCD: 10

- Rename the subtrahend. $2\frac{4}{5} = 2\frac{8}{10}$
- Rename the minuend. $8\frac{1}{10} = 7\frac{11}{10}$
- Subtract. $7\frac{11}{10} - 2\frac{8}{10} = 5\frac{3}{10}$

Estimate and then subtract. Write each answer in simplest form.

1. $\begin{array}{r} 6\frac{3}{4} \\ - 3\frac{1}{4} \\ \hline \end{array}$

2. $\begin{array}{r} 5\frac{11}{15} \\ - 4\frac{8}{15} \\ \hline \end{array}$

3. $\begin{array}{r} 10\frac{7}{8} \\ - 5\frac{2}{3} \\ \hline \end{array}$

4. $\begin{array}{r} 8\frac{1}{6} \\ - 4\frac{5}{12} \\ \hline \end{array}$

5. $\begin{array}{r} 14\frac{1}{2} \\ - 9\frac{5}{8} \\ \hline \end{array}$

6. $\begin{array}{r} 20\frac{3}{8} \\ - 17\frac{1}{2} \\ \hline \end{array}$

7. $\begin{array}{r} 19 \\ - 12\frac{2}{5} \\ \hline \end{array}$

8. $\begin{array}{r} 15\frac{4}{9} \\ - 12 \\ \hline \end{array}$

9. $6 - 2\frac{7}{8} =$ _____

10. $12\frac{2}{3} - 9 =$ _____

11. $12 - 10\frac{1}{9} =$ _____

12. $8\frac{1}{5} - \frac{2}{3} =$ _____

13. $5\frac{2}{9} - 4\frac{1}{5} =$ _____

14. $10\frac{1}{2} - 6\frac{1}{3} =$ _____

15. $18\frac{1}{3} - 9\frac{4}{5} =$ _____

16. $7 - 2\frac{7}{9} =$ _____

17. $5\frac{1}{4} - 2\frac{1}{2} + 1\frac{5}{6} =$ _____

18. $9\frac{3}{8} - 3\frac{1}{12} - 6\frac{1}{4} =$ _____

Problem Solving

19. Larry lives 3 mi from the library. Jalen lives $1\frac{5}{8}$ mi from the library. How much farther from the library does Larry live than Jalen? _____
20. Jane baked $8\frac{1}{4}$ dozen cupcakes. She sold all but $\frac{5}{6}$ dozen. How many dozen cupcakes did she sell? _____

Name _____

Multiply Fractions

Multiply.

Remember:

Multiply the numerators. Then multiply the denominators.

Write the product in simplest form.

1. $\frac{2}{5} \times \frac{1}{2} =$ _____

2. $\frac{4}{7} \times \frac{2}{3} =$ _____

3. $\frac{1}{2} \times \frac{3}{8} =$ _____

4. $\frac{8}{9} \times \frac{1}{4} =$ _____

5. $\frac{1}{6} \times \frac{1}{7} =$ _____

6. $\frac{3}{8} \times \frac{2}{3} =$ _____

7. $\frac{6}{8} \times \frac{1}{4} =$ _____

8. $\frac{4}{10} \times \frac{2}{3} =$ _____

9. $\frac{1}{3} \times \frac{1}{4} =$ _____

10. $\frac{7}{9} \times \frac{4}{7} =$ _____

11. $\frac{1}{2} \times \frac{3}{4} =$ _____

12. $\frac{1}{9} \times \frac{2}{3} =$ _____

13. $\frac{4}{5} \times \frac{1}{6} =$ _____

14. $\frac{2}{8} \times \frac{1}{8} =$ _____

Multiply using the greatest common factor.

Remember:

Divide *any* numerator and denominator by the greatest common factor (GCF).

Multiply the numerators. Then multiply the denominators. The product will be in simplest form.

15. $\frac{2}{5} \times \frac{15}{16} =$ _____

16. $\frac{5}{8} \times \frac{8}{9} =$ _____

17. $\frac{3}{4} \times \frac{6}{7} =$ _____

18. $\frac{1}{5} \times \frac{20}{21} =$ _____

19. $\frac{9}{11} \times \frac{22}{27} =$ _____

20. $\frac{2}{7} \times \frac{7}{8} =$ _____

21. $\frac{8}{12} \times \frac{6}{7} =$ _____

22. $\frac{4}{9} \times \frac{6}{10} =$ _____

23. $\frac{4}{16} \times \frac{1}{4} =$ _____

24. $\frac{2}{5} \times \frac{5}{8} =$ _____

25. $\frac{3}{7} \times \frac{14}{15} =$ _____

26. $\frac{14}{20} \times \frac{4}{7} =$ _____

27. $\frac{6}{10} \times \frac{5}{6} =$ _____

28. $\frac{4}{5} \times \frac{25}{28} =$ _____

Multiplying Fractions

(By Fractions or Whole Numbers)

Name _____

Date _____

Find the product.

1. $\frac{4}{5} \times \frac{3}{7} =$ _____

2. $\frac{1}{2} \times \frac{3}{5} =$ _____

3. $\frac{3}{4} \times \frac{5}{8} =$ _____

4. $5 \times \frac{1}{2} =$ _____

5. $\frac{3}{5} \times 6 =$ _____

6. $8 \times \frac{2}{7} =$ _____

7. $\frac{1}{2} \times \frac{4}{5} =$ _____

8. $\frac{2}{3} \times \frac{3}{5} =$ _____

9. $\frac{3}{8} \times \frac{4}{5} =$ _____

10. $\frac{2}{3} \times 24 =$ _____

11. $5 \times \frac{2}{5} =$ _____

12. $\frac{3}{4} \times 8 =$ _____

13. $\frac{5}{3} \times \frac{3}{10} =$ _____

14. $\frac{5}{6} \times \frac{12}{5} =$ _____

15. $\frac{5}{2} \times \frac{2}{5} =$ _____

16. $\frac{1}{2} \times \frac{3}{4} =$ _____

17. $\frac{2}{3} \times \frac{1}{5} =$ _____

18. $\frac{6}{7} \times \frac{1}{3} =$ _____

19. $\frac{9}{20} \times 20 =$ _____

20. $\frac{1}{12} \times 16 =$ _____

21. $\frac{2}{9} \times 24 =$ _____

Solve.

22. Maria completed $\frac{2}{3}$ of a 6000-mi trip. How far has she gone? How far has she still to go?

23. There are 300 children in a school. $\frac{3}{5}$ are boys. How many are boys? How many are girls?

24. Bill mowed $\frac{3}{4}$ of the lawn and his sister Jan raked $\frac{1}{3}$ of that. How much of the mowed lawn was raked?

25. Chris ordered 12 cases of soda for his party. Each case contained 24 bottles. The guests drank $\frac{3}{4}$ of the soda. How many bottles did they drink? How many cases were left?

Multiplying Mixed Numbers

Name _____

Date _____

Multiply.

1. $2\frac{1}{4} \times 3\frac{1}{2} =$ _____

2. $6\frac{2}{3} \times 1\frac{1}{4} =$ _____

3. $8\frac{1}{3} \times 2\frac{1}{2} =$ _____

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

5. $4\frac{2}{3} \times 4 =$ _____

6. $3 \times 1\frac{1}{8} =$ _____

7. $5 \times 2\frac{1}{3} =$ _____

8. $3\frac{1}{9} \times 10 =$ _____

9. $\frac{1}{2} \times 3\frac{1}{3} =$ _____

10. $\frac{1}{4} \times 5\frac{1}{7} =$ _____

11. $\frac{1}{3} \times 2\frac{1}{4} =$ _____

12. $\frac{1}{5} \times 8\frac{1}{3} =$ _____

13. $\frac{1}{2} \times 2\frac{1}{3} \times 1\frac{1}{5} =$ _____

14. $2\frac{2}{5} \times \frac{1}{3} \times 1\frac{1}{6} =$ _____

Find the product. Then use the distributive property to find the product.

15. $3 \times 6\frac{1}{2} =$ _____

16. $\frac{1}{2} \times 6\frac{1}{4} =$ _____

$(3 \times 6) + (3 \times \frac{1}{2}) =$ _____

$(\frac{1}{2} \times 6) + (\frac{1}{2} \times \frac{1}{4}) =$ _____

17. $7 \times 2\frac{1}{6} =$ _____

18. $\frac{2}{3} \times 3\frac{3}{5} =$ _____

$(7 \times 2) + (7 \times \frac{1}{6}) =$ _____

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

Solve.

19. Tom and Pauline work at processing photographs. A customer brings them a photograph which measures $3\frac{1}{2}$ in. by $5\frac{1}{4}$ in. The customer requests that they enlarge the photograph $2\frac{1}{2}$ times. Find the dimensions of the enlarged photograph.

20. Another customer brings them a square photograph measuring $3\frac{5}{6}$ in. on each side. The customer requests that the photograph be enlarged 3 times. Find the dimensions of the enlarged photograph.

Name _____

Divide Fractions

Divide.

Remember:

Multiply by the reciprocal of the divisor.
Simplify using the GCF, where possible.
Then multiply the numerators and the denominators.

Rename the product as a whole or mixed number when needed.

1. $\frac{4}{9} \div \frac{1}{3} =$

2. $\frac{6}{10} \div \frac{4}{5} =$

3. $\frac{2}{7} \div \frac{2}{3} =$

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

5. $\frac{6}{12} \div \frac{6}{10} =$

6. $\frac{8}{20} \div \frac{2}{4} =$

7. $\frac{5}{9} \div \frac{1}{3} =$

8. $\frac{14}{15} \div \frac{2}{3} =$

9. $\frac{11}{22} \div \frac{1}{2} =$

10. $\frac{2}{3} \div \frac{1}{9} =$

11. $\frac{12}{24} \div \frac{3}{4} =$

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

13. $\frac{9}{10} \div \frac{3}{5} =$

14. $\frac{1}{3} \div \frac{1}{9} =$

Name _____

Divide.

15. $\frac{16}{18} \div \frac{2}{9} =$

16. $\frac{4}{7} \div \frac{4}{1} =$

17. $\frac{5}{8} \div \frac{1}{12} =$

18. $\frac{1}{10} \div \frac{1}{2} =$

19. $\frac{2}{8} \div \frac{2}{5} =$

20. $\frac{3}{4} \div \frac{1}{6} =$

Dividing Whole Numbers by Fractions (Using Reciprocals)

Name _____

Date _____

Write the reciprocal.

- | | | | |
|---------------------------|--------------------------|--------------------------|--------------------------|
| 1. $\frac{2}{3}$ _____ | 2. $\frac{4}{5}$ _____ | 3. 6 _____ | 4. 9 _____ |
| 5. $\frac{5}{8}$ _____ | 6. $1\frac{1}{2}$ _____ | 7. $2\frac{3}{5}$ _____ | 8. $5\frac{1}{8}$ _____ |
| 9. $6\frac{2}{3}$ _____ | 10. $7\frac{1}{5}$ _____ | 11. $\frac{3}{7}$ _____ | 12. $\frac{8}{9}$ _____ |
| 13. $2\frac{1}{10}$ _____ | 14. $\frac{1}{10}$ _____ | 15. $3\frac{1}{5}$ _____ | 16. $\frac{2}{25}$ _____ |

Complete each division.

- | | |
|---|---|
| 17. $5 \div \frac{5}{8} = 5 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ | 18. $6 \div \frac{1}{2} = 6 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ |
| 19. $12 \div \frac{3}{4} = 12 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ | 20. $12 \div \frac{1}{6} = 12 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ |
| 21. $15 \div \frac{3}{7} = 15 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ | 22. $20 \div \frac{4}{5} = 20 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ |
| 23. $25 \div \frac{10}{13} = 25 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ | 24. $2 \div \frac{3}{4} = 2 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ |

Find the quotient.

- | | | |
|---|---|---|
| 25. $6 \div \frac{3}{4} = \underline{\hspace{1cm}}$ | 26. $7 \div \frac{2}{5} = \underline{\hspace{1cm}}$ | 27. $9 \div \frac{2}{3} = \underline{\hspace{1cm}}$ |
| 28. $1 \div \frac{1}{6} = \underline{\hspace{1cm}}$ | 29. $3 \div \frac{5}{7} = \underline{\hspace{1cm}}$ | 30. $8 \div \frac{2}{9} = \underline{\hspace{1cm}}$ |
| 31. $7 \div \frac{1}{5} = \underline{\hspace{1cm}}$ | 32. $8 \div \frac{1}{3} = \underline{\hspace{1cm}}$ | 33. $2 \div \frac{1}{4} = \underline{\hspace{1cm}}$ |

Match each division with its quotient.

- | | | | |
|----------------------------------|-------------------|--------------------------------|--------------------|
| 34. _____ $4 \div \frac{2}{3}$ | a. 6 | 39. _____ $6 \div \frac{4}{5}$ | a. $10\frac{1}{2}$ |
| 35. _____ $6 \div \frac{3}{4}$ | b. 10 | 40. _____ $9 \div \frac{6}{7}$ | b. 6 |
| 36. _____ $8 \div \frac{4}{5}$ | c. 8 | 41. _____ $3 \div \frac{4}{5}$ | c. 7 |
| 37. _____ $3 \div \frac{1}{3}$ | d. $5\frac{1}{3}$ | 42. _____ $2 \div \frac{2}{7}$ | d. $7\frac{1}{2}$ |
| 38. _____ $5 \div \frac{15}{16}$ | e. $2\frac{2}{3}$ | 43. _____ $8 \div \frac{2}{3}$ | e. $3\frac{3}{4}$ |
| | f. not given | | f. not given |

Dividing a Fraction by a Fraction or a Whole Number

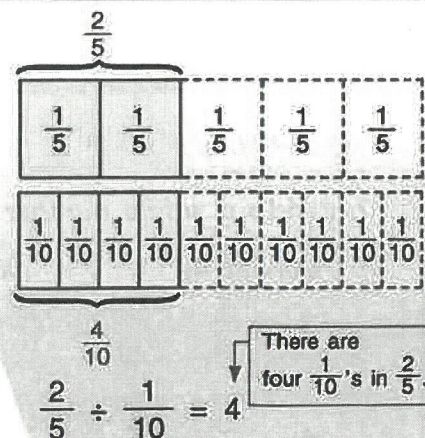
To divide a fraction by a fraction:

- Multiply by the *reciprocal* of the divisor.

$$\frac{2}{5} \div \frac{1}{10} = \frac{2}{\cancel{5}_1} \times \frac{\cancel{10}^2}{1} = \frac{4}{1} = 4$$

reciprocals

$$\frac{14}{15} \div \frac{7}{10} = \frac{\cancel{14}^2}{\cancel{15}_3} \times \frac{\cancel{10}^2}{\cancel{7}_1} = \frac{2 \times 2}{3 \times 1} = \frac{4}{3} = 1 \frac{1}{3}$$



To divide a fraction by a whole number:

- Rewrite the whole number as an *improper* fraction with a denominator of 1.
- Then divide the fractions.

$$\frac{2}{7} \div 4 = \frac{2}{7} \div \frac{4}{1} = \frac{\cancel{2}^1}{7} \times \frac{1}{\cancel{4}_2} = \frac{1}{14}$$

Complete these division examples.

1. $\frac{7}{9} \div \frac{2}{3} = \frac{7}{9} \times \frac{?}{?} = \frac{?}{?}$

2. $\frac{6}{7} \div \frac{1}{8} = \frac{6}{7} \times \frac{?}{?} = \frac{?}{?}$

3. $\frac{5}{8} \div 15 = \frac{5}{8} \times \frac{?}{?} = \frac{?}{?}$

4. $\frac{1}{2} \div 4 = \frac{1}{2} \times \frac{?}{?} = \frac{?}{?}$

Write each quotient in lowest terms.*

5. $\frac{3}{4} \div \frac{1}{5}$

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

7. $\frac{4}{5} \div \frac{1}{6}$

8. $\frac{9}{10} \div \frac{5}{7}$

9. $\frac{4}{11} \div \frac{1}{3}$

10. $\frac{5}{6} \div \frac{11}{12}$

11. $\frac{2}{9} \div 3$

12. $\frac{3}{8} \div 4$

13. $\frac{7}{12} \div 3$

14. $\frac{3}{7} \div \frac{2}{11}$

Write <, =, or >.

15. $\frac{4}{5} \div \frac{4}{5} \underline{\quad} 1$

16. $\frac{14}{15} \div \frac{7}{15} \underline{\quad} 1$

17. $\frac{3}{2} \div 3 \underline{\quad} \frac{1}{2}$

18. $\frac{4}{7} \div \frac{3}{7} \underline{\quad} 1$

19. $\frac{7}{8} \div \frac{7}{10} \underline{\quad} 1 \frac{1}{2}$

20. $\frac{2}{5} \div \frac{2}{7} \underline{\quad} 1$

21. $\frac{6}{5} \div \frac{2}{5} \underline{\quad} 2 \frac{1}{2}$

22. $\frac{16}{19} \div \frac{2}{7} \underline{\quad} \frac{1}{3}$

Solve.

23. The distance of a relay race was $\frac{4}{5}$ mile long. What distance did each of the 4 athletes on the relay team run?

24. If a watch loses $\frac{3}{20}$ of a minute in one day, in how many days will it have lost $\frac{3}{5}$ of a minute?

Dividing Mixed Numbers

Name _____

Date _____

Find the quotient. Write each in lowest terms.

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

2. $2\frac{3}{5} \div 1\frac{1}{10} =$ _____

3. $8\frac{2}{5} \div 2\frac{2}{10} =$ _____

4. $6\frac{2}{3} \div 2\frac{2}{9} =$ _____

5. $6\frac{1}{8} \div 2\frac{1}{3} =$ _____

6. $4\frac{2}{5} \div 3\frac{2}{5} =$ _____

7. $7\frac{1}{5} \div 1\frac{2}{3} =$ _____

8. $7\frac{1}{2} \div 3\frac{3}{4} =$ _____

9. $5\frac{1}{6} \div 3\frac{1}{3} =$ _____

10. $3\frac{1}{4} \div 1\frac{1}{2} =$ _____

11. $4\frac{2}{7} \div 1\frac{1}{5} =$ _____

12. $4\frac{1}{3} \div 2\frac{1}{2} \times 3\frac{1}{3} =$ _____

13. $8\frac{3}{4} \div 3\frac{1}{2} =$ _____

14. $2\frac{4}{5} \div \frac{14}{15} \times \frac{2}{3} =$ _____

15. $9\frac{1}{3} \div 2\frac{1}{3} =$ _____

16. $5\frac{1}{2} \div 3\frac{2}{3} =$ _____

17. $6\frac{1}{2} \times 1\frac{1}{9} \div 4\frac{1}{3} =$ _____

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

19. $2\frac{1}{4} \times 3\frac{3}{7} \div \frac{1}{14} =$ _____

20. $6\frac{1}{2} \times 3\frac{1}{2} \div 1\frac{3}{4} =$ _____

Solve.

21. Jerry has a board that is $4\frac{1}{2}$ in. thick.
He wants to cut it into shelves that are $\frac{5}{8}$ in. thick.
How many shelves can he cut from this board?
(Give the answer as a whole number.)

22. A bicycle path $3\frac{1}{2}$ miles long is marked in tenths of a mile. How many markers are there?
(There is no marker at the start of the bicycle path, but there is one at the end.)
