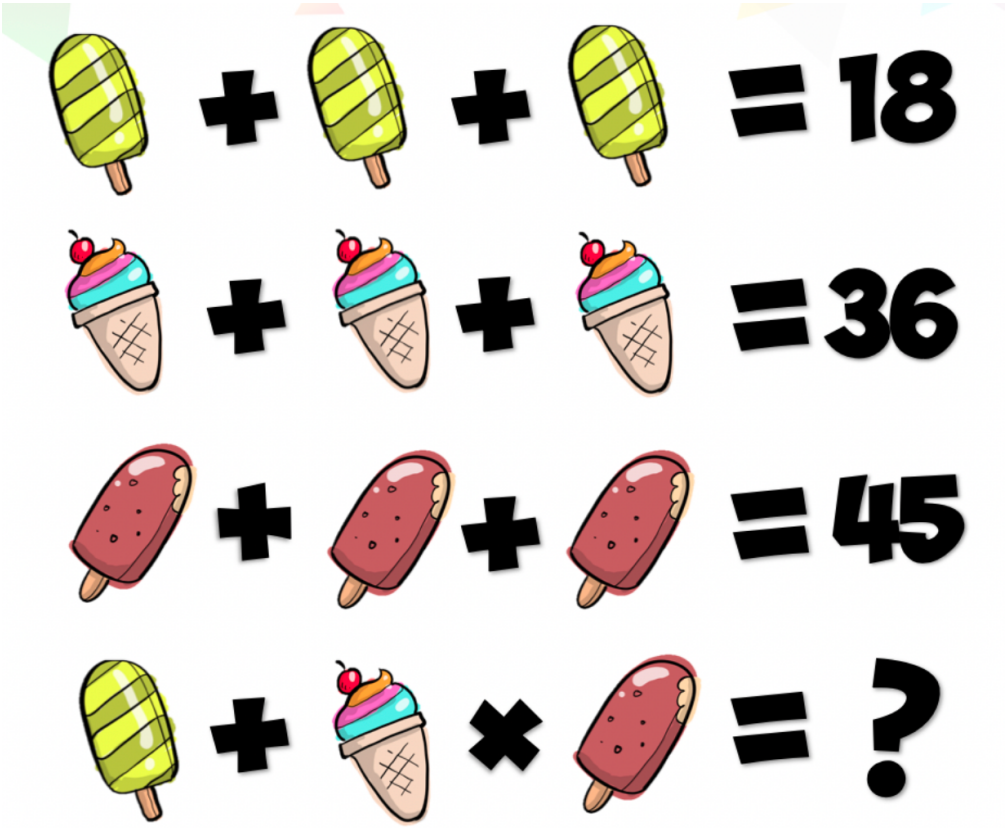
Summer Math Activities

for students entering

7th Grade



Please use this packet of math activities during the summer to continue practicing your skills. It will not be collected, however, we encourage you to spend time with math to help strengthen the skills you have worked hard to learn!

We look forward to seeing you soon!

The Nipher Math Team

NAME: _____

ONLINE RESOURCES

The following resources were checked by teachers and are considered appropriate. However, parents should always monitor their child's use of technology.

Basic Facts	www.xtramath.org ***focus on multiplication and division***	
Specific Skills	www.IXL.com/math **Log-In to school account using CLASSLINK**	
Video Lessons	https://www.khanacademy.org	
Math Puzzles	https://www.mashupmath.com/freemathpuzzles	
Digital Flash Cards	https://toytheater.com/math-flash-cards/	

6TH GRADE MATH STATE TEST REFERENCE SHEET

Changing Mixed Numbers

Multiply, add, keep denominator

$2\frac{3}{4} = \frac{11}{4}$

Multiplying Fractions

Multiply numerators, multiply denominators, simplify.

Step 1: Multiply the Numerators — Step 2: Multiply the Denominators — Step 3: Simplify

$\frac{2}{5} \times \frac{3}{4} = \frac{6}{20} \overset{\div 2}{=} \frac{3}{10}$

Dividing Fractions

(Multiply by the reciprocal)

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

Change any mixed numbers.

KEEP CHANGE FLIP

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

$\frac{5}{2} \times \frac{3}{2} = \frac{15}{4} = 3\frac{3}{4}$

Adding & Subtracting Decimals

$2.75 + 4.30 = 7.05$

$9.20 - 3.45 = 5.75$

LINE UP the decimals!

(Add zeros if necessary)

Multiplying Decimals

2.75×4.3

$825 + 1100 = 11.825$

Count the decimal places and place it in the product.

(No need to line up)

Dividing Decimals

$3.80 \div 0.02 = 380 \div 2 = 190$

Can't have decimal in the 2nd number (or outside "house") move it → in both numbers!

GCF

The largest factor 2 or more numbers have in common.

Factors of 15: 1, 3, 5, and 15.

Factors of 20: 1, 2, 4, 5, 10, and 20.

The GCF of 15 and 20 is 5

Clues: grouping, making smaller groups, greatest amount

LCM

The smallest multiple 2 or more numbers have in common.

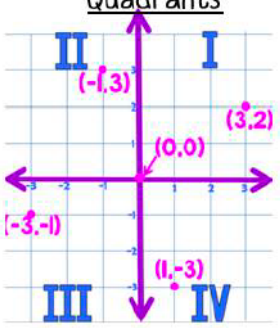
Multiples of 15: 15, 30, 45, 60, 75...

Multiples of 20: 20, 40, 60, 80, 100...

The LCM of 15 and 20 is 60

Clues: repeating event, needing to buy multiple, next time, least amount

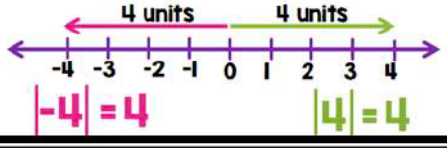
Quadrants



Absolute Value

Absolute Value is the distance a number is from zero.

Distance is always positive.



Positive Key Words	Negative Key Words	Meaning of Zero
• Above • Gains • Increases • Deposit • Above sea level • Profit • Ascent	• Below • Lose • Decrease • Withdraw • Below sea level • Debt • Descent	• Sea level • Ground level • 0 degrees • No change

FRACTION	DECIMAL	PERCENT
$\frac{1}{4}$	0.25	25%
$\frac{1}{3}$	$0.\overline{3}$	$33.\overline{3}\%$
$\frac{1}{2}$	0.5	50%
$\frac{1}{5}$	0.2	20%
$\frac{3}{4}$	0.75	75%
$\frac{1}{10}$	0.1	10%

The Order of Operations

P: Parentheses ( )

E: Exponents^2

M/D: Multiply or Divide left to right.

A/S: Add or Subtract left to right.

Exponents

BASE 2^4 Exponent

$2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 16$

POWER

Power	Expanded	Value
3^2	3 x 3	9
4^2	4 x 4	16
5^2	5 x 5	25
3^3	3 x 3 x 3	27

Translating Expression Keywords:

ADDING	SUBTRACTING	MULTIPLYING	DIVIDING	REVERSE ORDER	EXPONENTS
• Plus • Sum • Increased • More • Altogether • Combined	• Minus • Difference • Less • Deduct • Decreased	• Times • Product • Of • Doubled • Per • Each	• Division • Quotient • Half • Per/Each • of	• Than • From	• Squared • Cubed

Solving Percent

$$\frac{\text{PART(is)}}{\text{WHOLE(of)}} = \frac{\%}{100}$$

Ratios

♥ ♥ ★ ♥ ★ ♥ ★ ♥ ♥

- Hearts to Stars: 6 to 3, 6:3, 6/3 ... 2 to 1, 2:1, 2/1
- Stars to Hearts: 3 to 6, 3:6, 3/6 ... 1 to 2, 1:2, 1/2
- Hearts to shapes: 6 to 9, 6:9, 6/9 ... 2 to 3, 2:3, 2/3

Ratio Table:

Stars	1	2	8
Hearts	2	4	16

Combining Like Terms:

Have the **same variable** & **same exponent**.
The coefficient does not have to match

$3x + 2y - x + 8y + 3$

$3x + 2y + -x + 8y + 3$

$3x + -x + 2y + 8y + 3$

$2x + 10y + 3$

Distributing IN

$14(3x + 2)$

$14 \cdot 3x + 14 \cdot 2$

$42x + 28$

Distributing OUT

$42x + 28$

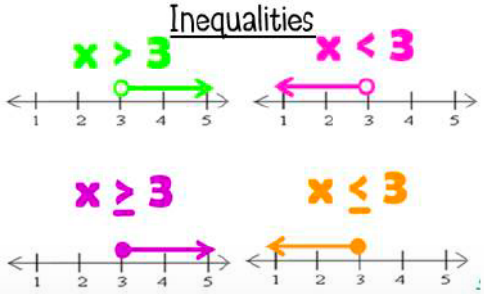
$14(3x + 2)$

GCF FACTORS

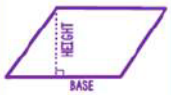
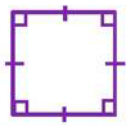
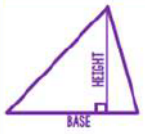
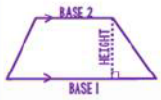
GCF = 14

42	28
6	4
3	2

Inequalities



RATE	UNIT RATE
80 miles / 2 hours	40 miles / 1 hour

SHAPE	SHAPE NAME	FORMULA
	PARALLELOGRAM	$A = b \cdot h$
	SQUARE	$A = s^2$
	TRIANGLE	$A = \frac{1}{2} b \cdot h$
	TRAPEZOID	$A = \frac{1}{2}(b_1 + b_2)h$

FACTOR CHART 1-12

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

MATH CARD GAMES

Playing games involving reasoning and numbers can help your child gain confidence in math. These games can all be played with a regular deck of cards: **Crazy 8's, Rummy, Go Fish, Solitaire, Speed, Spoons**. The following pages have directions for a few school math card games to try too!

Secrets of The Great Pyramid

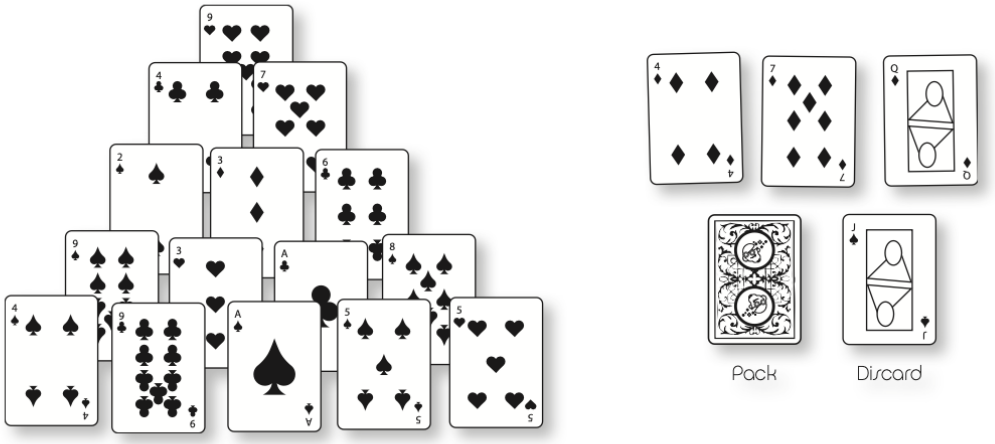
Materials

One deck of playing cards. Jokers are removed. Aces = 1, Jacks = 11, Queens = 12, Kings = 13, all other cards face value.

Rules and Play

1. The game *Secrets of the Great Pyramid* is for one player/team using on deck of cards.

2. Deal 15 cards face up in a pyramid as shown below. Then deal three cards for use in attempting to remove cards from the pyramid (4, 7, 12). Place the remaining cards face down on the playing surface.



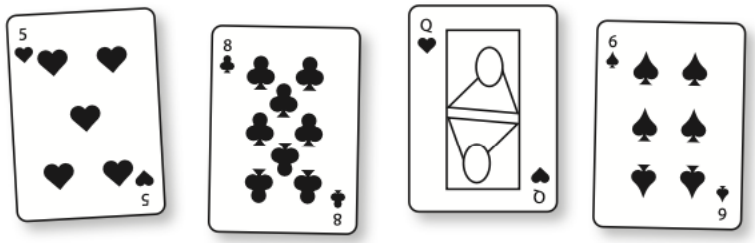
3. The object of the game is to remove all 15 cards from the pyramid by combining the value of two or three cards from the pack. You can add, subtract, multiply, or divide. Play begins by attempting to remove cards from the bottom row of the pyramid. In the example above, we could remove the 5 of Spades or the 5 of Hearts because they are both "free" and 12 – 7 =5. We could also have removed the 4 of Spades, 9 of Clubs or the Ace of Spades by using all three cards: 7 – (12+4)= 4; 12- 7 +4= 9; 12- (7+4)= 1. Players must decide which move to make, using either two or three cards.

4. Any unused card is returned to the pack and can be used later. If you cannot form a sentence that will remove a card, then place these cards in the discard pile and deal a new set of three.

5. Continue play until the pyramid is cleared or the pack is depleted. Record the results of each game on the graph on the next page. Each player is allowed only one pass through the pack.

Lucky 13 Challenge

The numbers from 1 to 13 can be formed using the four cards below (Queen = 12). You may use addition, subtraction, multiplication, division, place value, exponents, square roots, factorials, or even decimal points. The first two problems have been done for you. See how many you can find. Record your results below.



1 (8 - 5) - (12 / 6) = 1

2 (12 - 6) / (8 - 5) = 2

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

11 _____

12 _____

13 _____

***Ready for more?**

Draw your own 4 cards and see how many numerical expressions, from 1-13, you can create.

Triple Play

Materials

One deck of playing cards.

Rules and Play

1. *Triple Play* is a card game for two to four players/teams.

2. The dealer removes all of the face cards and Tens from the deck. Aces = 1, Jokers= 0.

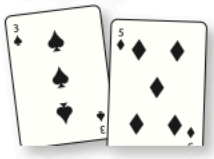
3. The dealer places the cards face down in one, two, three, four or five piles, depending up on the maturity of the players and the difficulty level desired. There should be an equal number of cards in each pile.

4. Play begins by having the dealer turn over the top card in each pile. Samples involving one- and two- digit games are shown below.

Tripling 1-Digit Numbers



Tripling 2-Digit Numbers



5. The first player/team who can correctly triple the number shown on the card(s) wins the set of cards. If a tie results, the top card(s) are set aside from each pile and either buried or become a part of winnings in the next round.

6. Play continues until the piles are depleted. The player/team with the most cards wins the game.

***This game is like the popular card game "speed" but involves math calculations too. Have fun playing!**

Addition & Subtraction of Fractions & Mixed Numbers

Adding & Subtracting Fractions

1. Find a common denominator.
2. Add or subtract the two numerators and keep the denominator the same.
3. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $\frac{1}{3}+\frac{1}{6}$

$$\begin{array}{r} \frac{1}{3}\overset{\times 2}{=}\frac{2}{6} \\ +\ \frac{1}{6}\overset{\times 1}{=}\frac{1}{6} \\ \hline \frac{3}{6}\overset{\div 3}{=}\boxed{\frac{1}{2}} \end{array}$$

Adding Mixed Numbers

1. Find a common denominator.
2. Add the two numerators and keep the denominator the same.
3. Add the whole numbers.
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $2\frac{3}{4}+1\frac{2}{3}$

$$\begin{array}{r} 2\frac{3}{4}=2\frac{9}{12} \\ +\ 1\frac{2}{3}=1\frac{8}{12} \\ \hline 3\frac{17}{12}=\boxed{4\frac{5}{12}} \end{array}$$

Subtracting Mixed Numbers

1. Find a common denominator.
2. Subtract the two numerators and keep the denominators the same. If the top numerator is smaller than the bottom numerator, borrow from the whole number and rename the top fraction.
3. Subtract the whole numbers
4. Simplify the answer.

ex: $3\frac{1}{4}-1\frac{1}{3}$

$$\begin{array}{r} 3\frac{1}{4}=\cancel{3}^{\,2}\frac{3}{12}+\frac{12}{12}=2\frac{15}{12} \\ -\ 1\frac{1}{3}=1\frac{4}{12}\qquad\quad =1\frac{4}{12} \\ \hline \boxed{1\frac{11}{12}} \end{array}$$

Find the sum. Write your answer in simplest form.

1. $\frac{1}{4} + \frac{1}{2}$	2. $\frac{2}{5} + \frac{1}{3}$	3. $\frac{7}{15} + \frac{3}{10}$	4. $\frac{11}{28} + \frac{4}{7}$
5. $\frac{3}{4} + \frac{1}{12}$	6. $\frac{9}{10} + \frac{13}{20}$	7. $4\frac{15}{16} + 7\frac{3}{4}$	8. $2\frac{16}{25} + 3\frac{18}{20}$
9. $3\frac{2}{5} + 9\frac{1}{10}$	10. $6\frac{1}{42} + 4\frac{5}{6}$	11. $18\frac{7}{9} + 16$	12. $4\frac{7}{8} + \frac{1}{3}$

Find the difference. Write your answer in simplest form.

13. $\frac{7}{8} - \frac{1}{4}$	14. $\frac{13}{15} - \frac{1}{3}$	15. $\frac{7}{9} - \frac{2}{6}$	16. $\frac{21}{24} - \frac{3}{8}$
17. $\frac{3}{14} - \frac{1}{7}$	18. $\frac{9}{10} - \frac{1}{2}$	19. $9 - 4\frac{1}{12}$	20. $12\frac{18}{25} - 8\frac{4}{5}$
21. $5\frac{8}{9} - 3\frac{2}{3}$	22. $8\frac{12}{16} - 7\frac{31}{32}$	23. $10\frac{3}{4} - 6\frac{4}{5}$	24. $13\frac{7}{8} - \frac{10}{12}$

Multiplication & Division of Fractions & Mixed Numbers

Multiplying Fractions & Mixed Numbers

1. Turn any mixed numbers and whole numbers into improper fractions.
2. Cross-simplify if possible.
3. Multiply the numerators and then multiply the denominators
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $2\frac{1}{4} \cdot \frac{1}{3}$

$\frac{\overset{3}{\cancel{4}}}{4} \cdot \frac{1}{\underset{1}{\cancel{3}}} = \boxed{\frac{3}{4}}$

Dividing Fractions & Mixed Numbers

1. Turn any mixed numbers and whole numbers into improper fractions.
2. Keep the first fraction the same, change the division to multiplication, and flip the second fraction to its reciprocal.
3. Multiply the fractions.
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $7 \div 1\frac{3}{4}$

$\frac{7}{1} \div \frac{7}{4}$

$\downarrow$

$\frac{\overset{1}{\cancel{7}}}{1} \cdot \frac{4}{\underset{1}{\cancel{7}}} = \frac{4}{1} = \boxed{4}$

Find the product. Write your answer in simplest form.

25. $\frac{1}{8} \cdot \frac{1}{7}$	26. $\frac{2}{9} \cdot \frac{12}{14}$	27. $\frac{7}{12} \cdot \frac{8}{14}$	28. $\frac{9}{24} \cdot \frac{16}{81}$
29. $\frac{3}{14} \cdot \frac{21}{33}$	30. $\frac{1}{2} \cdot \frac{9}{13}$	31. $2\frac{1}{6} \cdot \frac{3}{5}$	32. $8\frac{4}{5} \cdot 1\frac{5}{11}$
33. $2\frac{1}{2} \cdot \frac{2}{5}$	34. $9\frac{2}{3} \cdot 6$	35. $13\frac{1}{3} \cdot 2\frac{1}{10}$	36. $7 \cdot \frac{1}{3}$

Find the quotient. Write your answer in simplest form.

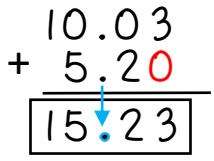
37. $\frac{5}{6} \div \frac{1}{4}$	38. $\frac{1}{2} \div \frac{1}{4}$	39. $\frac{3}{4} \div \frac{9}{12}$	40. $\frac{21}{35} \div \frac{7}{25}$
41. $\frac{6}{7} \div 3$	42. $\frac{2}{11} \div \frac{1}{33}$	43. $1\frac{1}{4} \div 2\frac{1}{3}$	44. $5\frac{3}{6} \div 3$
45. $10\frac{1}{4} \div \frac{2}{5}$	46. $3\frac{2}{3} \div 1\frac{1}{7}$	47. $4\frac{3}{8} \div \frac{9}{10}$	48. $8 \div \frac{3}{4}$

Operations with Decimals

Adding & Subtracting Decimals

1. Write the problem vertically, lining up the decimal points.
2. Add additional zeroes at the end, if necessary, to make the numbers have the same number of decimal places.
3. Add/subtract as if the numbers are whole numbers
4. Bring the decimal point straight down

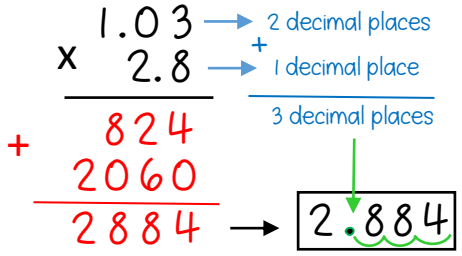
ex: 10.03 + 5.2



Multiplying Decimals

1. Write the problem vertically with the numbers lined up to the right. The decimal points do NOT need to be lined up.
2. Ignore the decimals and multiply as if the numbers are whole numbers.
3. Count the total number of decimal places in the factors and put a decimal point in the product so that it has that same number of decimal places.

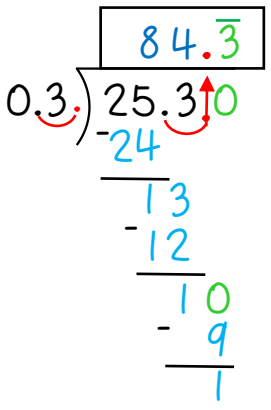
ex: 1.03 x 2.8



Dividing Decimals

1. Write the dividend under the long division symbol and the divisor to the left of it.
2. Move the decimal point in the divisor after the number to turn it into a whole number and then move the decimal in the dividend the same number of places. Then bring it up.
3. Divide as if the numbers are both whole numbers.
4. Annex zeros in the dividend as needed until there is no remainder. If your answer is a repeating decimal, write the answer using bar notation.

ex: 25.3 ÷ 0.3



Find the sum or difference.

49. $6.2 + 3.4$	50. $8.04 - 6.8$	51. $12.4 + 0.899$	52. $12.9 - 2.043$
53. $163.29 + 13.987$	54. $13 - 6.7$	55. $3.91 + 1.93$	56. $34.2 - 29.027$

Find the product.

57. $9.2 \cdot 3.1$	58. $(14.1)(2.7)$	59. 91×4.5	60. 82.04×1.2
61. $(1.1)(6.78)$	62. $45 \cdot 0.1$	63. 0.010×13.9	64. $(2.34)(5.6)$

Find the quotient.

65. $8.4 \div 2$	66. $1.56 \div 1.3$	67. $7.45 \div 2$	68. $9 \div 0.8$
69. $68 \div 3.4$	70. $9.4 \div 0.2$	71. $0.045 \div 0.15$	72. $4 \div 0.3$

Geometry

Area Formulas

*** Remember that area is the space *inside* a figure! ***

- Area of a Rectangle = length x width
- Area of a Parallelogram = base x height
- Area of a Triangle = ½ base x height
- Area of a Circle = π x radius^2

Perimeter Formulas

*** Remember that perimeter is the distance *around* a figure! ***

- Perimeter of Any Polygon: add up all of the side lengths
- Circumference of a Circle = 2 x π x radius

Volume Formula

*** Remember that volume is the capacity of a 3D figure! ***

- Volume of a Rectangular Prism: length x width x height

Find the area and perimeter (or circumference) of each figure. Use 3.14 for π.

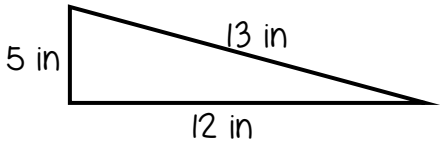
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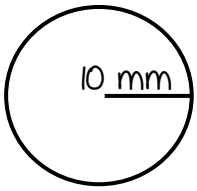
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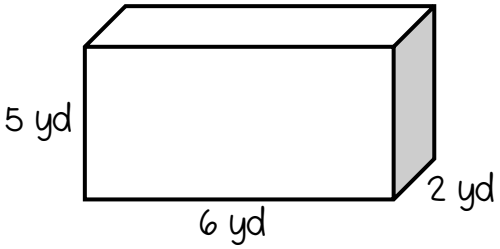


76.



Find the volume.

77.



Solve each word problem.

78. Danny is installing a fence around his rectangular yard. His yard is 20 feet long by 45 feet wide. If the fencing he picked out costs $25 per foot, how much money will Danny spend on the fence?

79. Tameka wants to put a carpet in her rectangular bedroom. Her room is 22 feet long by 18 feet wide. How much carpeting will Tameka need?

80. Don wants to bring some sand home from his vacation at the beach. He has a box that is 3 inches wide, 4 inches long, and 2 inches tall. How much sand can he fit in the box?

One-Step Equations

Addition Equations

Subtract the number being added to the variable from both sides of the equation

ex: $4 + x = 18$
$-4 \quad -4$
$x = 14$

Subtraction Equations

Add the number being subtracted from the variable to both sides of the equation

ex: $20 = a - 5$
$+5 \quad +5$
$25 = a \rightarrow a = 25$

Multiplication Equations

Divide both sides of the equation by the number next to the variable

ex: $\frac{7b}{7} = \frac{28}{7}$
$b = 4$

Division Equations

Multiply both sides of the equation by the number under the variable

ex: $5 \cdot \frac{n}{5} = 10 \cdot 5$
$n = 50$

Solve each one-step equation for the given variable.

81. $x + 18 = 32$	82. $18f = 720$	83. $h - 56 = 57$	84. $\frac{b}{6} = 12$
85. $12 = r - 76$	86. $33 + d = 65$	87. $14m = 42$	88. $10c = 5$
89. $38 = 19j$	90. $w + 65 = 100$	91. $r - 7 = 9$	92. $x \div 12 = 9$
93. $14 + x = 18$	94. $\frac{p}{22} = 7$	95. $47 = x - 5$	96. $k + 16 = 76$
97. $2 = 6m$	98. $t - 8 = 14$	99. $\frac{h}{19} = 11$	100. $47 = 18 + b$

Adding & Subtracting Decimals

1. Write the problem vertically, lining up the decimal points.
2. Add additional zeroes at the end, if necessary, to make the numbers have the same number of decimal places.
3. Add/subtract as if the numbers are whole numbers
4. Bring the decimal point straight down

ex: 14.2 - 7.934

$$\begin{array}{r} 14.200 \\ -\ 7.934 \\ \hline 6.266 \end{array}$$

Multiplying Decimals

1. Write the problem vertically with the numbers lined up to the right. The decimal points do NOT need to be lined up.
2. Ignore the decimals and multiply as if the numbers are whole numbers.
3. Count the total number of decimal places in the factors and put a decimal point in the product so that it has that same number of decimal places.

ex: 6.94 x 7.8

$$\begin{array}{r} 6.94 \\ \times\ 7.8 \\ \hline 5552 \\ +\ 48580 \\ \hline 54132 \end{array}$$

6.94 → 2 decimal places
\+
7.8 → 1 decimal place
3 decimal places

54.132

Dividing Decimals

1. Write the dividend under the long division symbol and the divisor to the left of it.
2. Move the decimal point in the divisor after the number to turn it into a whole number and then move the decimal in the dividend the same number of places. Then bring it up.
3. Divide as if the numbers are both whole numbers.
4. Annex zeros in the dividend as needed until there is no remainder. If your answer is a repeating decimal, write the answer using bar notation.

ex: 25.3 ÷ 0.3

$$\begin{array}{r} 84.\overline{3} \\ 0.3\overline{)25.30} \\ -24 \\ \hline 13 \\ -12 \\ \hline 10 \\ -\ 9 \\ \hline 1 \end{array}$$

Order of Operations

1. Grouping Symbols (parentheses, brackets, etc.)
2. Exponents
3. Multiplication & Division (left to right)
4. Addition & Subtraction (left to right)

ex: 5 + 4(3 - 1.2)

5 + 4(1.8)

5 + 7.2

12.2

Evaluate each expression.

1. $5.983 + 2.99$	2. $224 - 56.73$	3. $6.12 - 4.923$
4. $24.5 \cdot 3.2$	5. $0.23 \cdot 7$	6. $3.86 \cdot 9.15$
7. $14.8 \div 5$	8. $46.3 \div 1.5$	9. $147 \div 2.25$
10. $24.33 - 2.5 \cdot 7$	11. $3.9 + 4.5^2$	12. $9.25(18.4 - 2 \cdot 1.2)$

Solve each word problem, showing all work.

13. Jeff had \$46.18 in his wallet Monday morning. He gave half of his money to his brother. He then bought two donuts for \$0.75 each and a cup of coffee for \$2.99. How much money did Jeff have left?	14. Five friends split a \$65.20 bill at a restaurant. They also each left \$2.75 for the tip. How much money did each person pay in all?

Adding Fractions & Mixed Numbers

1. Find a common denominator for the two fractions.
2. Add the two numerators and keep the denominator the same.
3. Add the whole numbers.
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $3\frac{3}{4} + 2\frac{1}{2}$

$3\frac{3}{4} = 3\frac{3}{4}$

$+ \quad 2\frac{1}{2} = 2\frac{2}{4}$

$5\frac{5}{4} = \boxed{6\frac{1}{4}}$

Subtracting Fractions & Mixed Numbers

1. Find a common denominator for the two fractions.
2. Subtract the two numerators and keep the denominators the same. If the top numerator is smaller than the bottom numerator, borrow from the whole number and rename the top fraction.
3. Subtract the whole numbers.
4. Simplify the answer.

ex: $5\frac{1}{4} - 1\frac{2}{3}$

$5\frac{1}{4} = 5\frac{3}{12} = 4\frac{15}{12}$

$- \quad 1\frac{2}{3} = 1\frac{8}{12} = 1\frac{8}{12}$

$\boxed{3\frac{7}{12}}$

Multiplying Fractions & Mixed Numbers

1. Turn any mixed numbers and whole numbers into improper fractions.
2. Cross-simplify if possible.
3. Multiply the numerators and then multiply the denominators
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $2\frac{1}{6} \cdot \frac{4}{7}$

$\frac{13}{\cancel{6}_{3}} \cdot \frac{\cancel{4}^{2}}{7} = \frac{26}{21} = \boxed{1\frac{5}{21}}$

Dividing Fractions & Mixed Numbers

1. Turn any mixed numbers and whole numbers into improper fractions.
2. Keep the first fraction the same, change the division to multiplication, and flip the second fraction to its reciprocal.
3. Multiply the fractions.
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $7 \div 1\frac{3}{4}$

$\frac{7}{1} \div \frac{7}{4}$

$\downarrow$

$\frac{\cancel{7}^{1}}{1} \cdot \frac{4}{\cancel{7}_{1}} = \frac{4}{1} = \boxed{4}$

Evaluate each expression.

15. $\frac{4}{5} + \frac{3}{4}$	16. $4\frac{2}{7} + 2\frac{9}{14}$	17. $8\frac{11}{12} + 9\frac{5}{18}$
18. $6 - \frac{3}{8}$	19. $8\frac{3}{5} - 2\frac{1}{3}$	20. $4\frac{1}{6} - \frac{8}{9}$
21. $\frac{4}{25} \cdot \frac{15}{16}$	22. $2\frac{3}{4} \cdot 8$	23. $6\frac{5}{8} \cdot 3\frac{1}{2}$
24. $\frac{7}{9} \div \frac{2}{3}$	25. $\frac{4}{5} \div 10$	26. $5\frac{2}{3} \div 2\frac{5}{6}$

Solve each word problem, showing all work.

27. Jaimie ran $3\frac{1}{2}$ miles on Monday. She ran half as far on Tuesday as she did on Monday. How far did Jaimie run in all on Monday and Tuesday?	28. A $5\frac{1}{2}$ quart pot is filled $\frac{2}{3}$ of the way with water. How many more quarts of water can the pot hold?

Ratios

Ratios are comparisons of two quantities.
There are 3 different ways to write ratios:

- Fraction $\left(\frac{A}{B}\right)$
- Colon (A:B)
- Word Form (A to B)

Ratios can be simplified just like fractions.

ex: write the ratio of triangles to circles in 3 ways: ▲▲▲▲●●

$\frac{4}{2} = \boxed{\frac{2}{1},\ 2:1,\ 2 \text{ to } 1}$

Rates & Unit Rates

Rates are ratios that compare quantities measured in different units.
A unit rate is a rate with a denominator of 1.

To convert a rate to a unit rate:

1. Divide the numerator by the denominator
2. Either write your answer as a fraction with a label for the both the numerator and denominator OR as one number labeled with the first unit "per" the second unit

ex: express as a unit rate: 125 miles in 4 hours

$\frac{125 \text{ mi}}{4 \text{ hr}}$ $125 \div 4 = 31.25$

$\boxed{\frac{31.25 \text{ mi}}{1 \text{ hr}} \text{ or } 31.25 \text{ miles per hr}}$

Fractions, Decimals, & Percent

To convert a:

- Decimal to Percent: move the decimal point 2 places to the right — ex: $0.345 = \boxed{34.5\%}$
- Percent to Decimal: move the decimal point 2 places to the left — ex: $.7\% = \boxed{0.07}$
- Decimal to Fraction: write the decimal over the place value of the last digit and then simplify — ex: $0.008 = \frac{8}{1000} = \boxed{\frac{1}{125}}$
- Fraction to Decimal: divide the numerator by the denominator — ex: $\frac{1}{5} = 5\overline{)1.0} = \boxed{0.2}$
- Percent to Fraction: write the percent over 100 and then simplify — ex: $45\% = \frac{45}{100} = \boxed{\frac{9}{20}}$
- Fraction to Percent: convert the fraction to a decimal and then convert the decimal to a percent — ex: $\frac{3}{10} = 0.3 = \boxed{30\%}$

Percent of a Number

1. Turn the percent to a fraction or decimal.
2. Multiply the fraction/decimal by the number.

ex: Find 18% of 40

$0.18 \cdot 40 = \boxed{7.2}$

Write each ratio in 3 ways.

29. A bank contains 15 pennies and 12 nickels. Write the ratio of nickels to pennies.	30. A bowl contains 6 apples and some bananas. If there are a total of 10 pieces of fruit, find the ratio of apples to bananas.

Convert each rate to a unit rate.

31. $4.25 for 64 fluid ounces	32. 297 miles on 11 gallons of gas	33. 124 feet in 10 seconds

Complete the chart by converting each number to a percent, fraction, and/or decimal.

Fraction	Decimal	Percent
34. $\frac{3}{8}$		
35.	0.45	
36.		72%
37.	0.1	
38. $\frac{3}{200}$		

Find each percent of a number.

39. 30% of 90	40. 15% of 38	41. 50% of 86
42. 75% of 160	43. 24% of 35	44. 2% of 74

Comparing Integers

Integers are numbers without fractional parts. They can be positive, negative, or zero. The further right a number is on the number line, the greater it is.



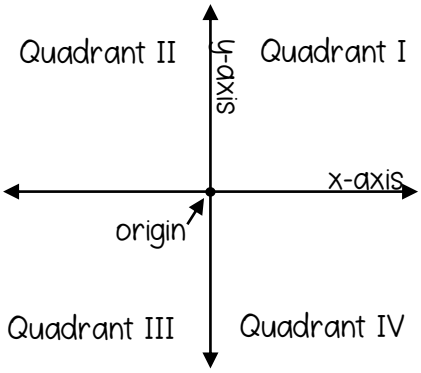
The absolute value of a number is the distance the number is from zero.

ex: compare with <, >, or =

$-7 \bigcirc |-9|$ ← The absolute value of $-9 = 9$

$-7 \boxed{<} 9$

The Coordinate Plane

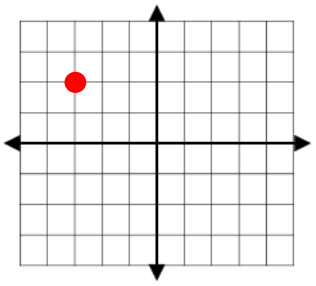


Ordered Pair: (x, y)

To graph a point on the coordinate plane, start at the origin. The first number in the ordered pair (the x-coordinate) tells you how far left (if negative) or right (if positive) to move. The second number (the y-coordinate) tells you how far up (if positive) or down (if negative) to move.

ex: Graph the point (-3, 2) and state the quadrant in which it is located.

Start at the origin, and move LEFT 3 and UP 2

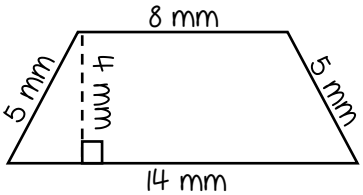


Quadrant II

Perimeter, Area and Volume

- Perimeter of Any Polygon: add all side lengths
- Area of a Rectangle: $A = lw$
- Area of Parallelogram: $A = bh$
- Area of Triangle: $A = \frac{1}{2}bh$
- Area of Trapezoid: $A = \frac{1}{2}h(b_1 + b_2)$
- Volume of Rectangular Prism: $V = lwh$

ex: Find the perimeter & area:



Perimeter: $P = 5 + 8 + 5 + 14 =$ 32 mm

Area: This is a trapezoid, so use the area of a trapezoid formula: $A = \frac{1}{2}h(b_1 + b_2)$

The bases are the sides that are parallel, and the height is perpendicular to the bases.

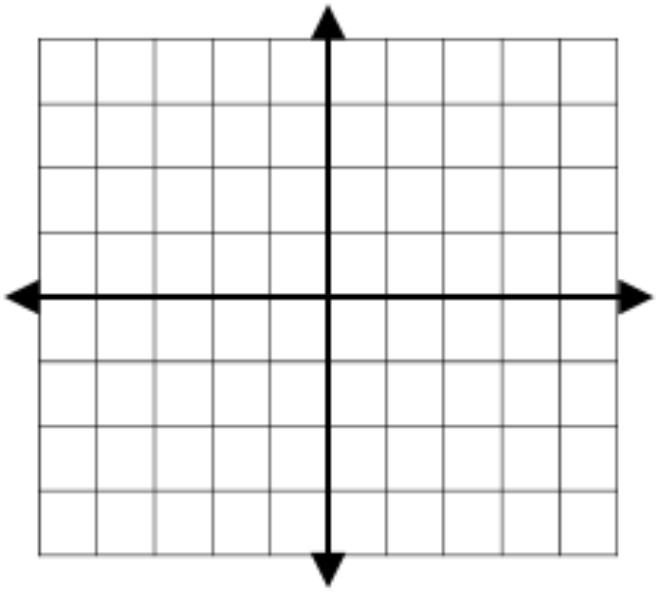
→ $A = \frac{1}{2}(4)(8+14) =$ 44 mm²

Compare the integers with <, >, or =.

45. -4 ◯ -5	46. 2 ◯ -2	47. $\lvert -5 \rvert$ ◯ $\lvert 5 \rvert$	48. -7 ◯ 6	49. -13 ◯ -9
50. $\lvert -7 \rvert$ ◯ -6	51. -17 ◯ -14	52. $\lvert -3 \rvert$ ◯ $\lvert -2 \rvert$	53. 0 ◯ -6	54. $\lvert -4 \rvert$ ◯ $\lvert 6 \rvert$

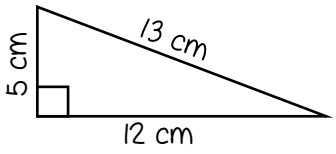
Graph and label each of the ordered pairs in the coordinate plane. Then state the quadrant or axis in/on which the point is located.

55. A(2, 4)	56. B(0, -3)
57. C(1, -1)	58. D(3, 3)
59. E(-4, 1)	60. F(2, 0)
61. G(-3, -2)	62. H(-2, 3)
63. I(0, 2)	64. J(-1, -4)

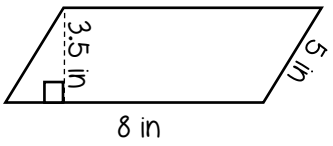


Find the perimeter, area, and/or volume of the given figure.

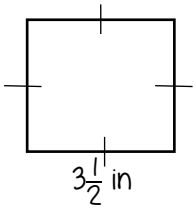
65. Find the perimeter & area:



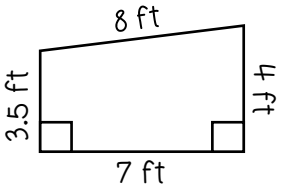
66. Find the perimeter & area:



67. Find the perimeter & area:

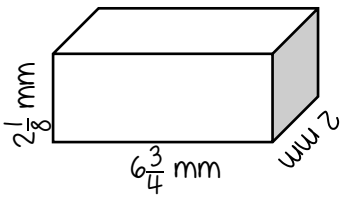


68. Find the perimeter & area:



69. Find the area of a square with a perimeter of 45 cm

70. Find the volume:



Evaluating Algebraic Expressions

1. Substitute the given numbers for the variables
2. Evaluate the expression using the order of operations

ex: evaluate $x + 4y$ for $x = 4$ & $y = 6$

$4 + 4(6)$
$4 + 24 = \boxed{28}$

One-Step Addition & Subtraction Equations

- Addition Equations: Subtract the number being added to the variable from both sides of the equation

ex: $4 + x = 18$
$-4 \quad -4$
$\boxed{x = 14}$

- Subtraction Equations: Add the number being subtracted from the variable to both sides of the equation

ex: $20 = a - 5$
$+5 \quad +5$
$25 = a \rightarrow \boxed{a = 25}$

One-Step Multiplication & Division Equations

- Multiplication Equations: Divide both sides of the equation by the number next to the variable

ex: $\frac{7b}{7} = \frac{28}{7}$
$\boxed{b = 4}$

- Division Equations: Multiply both sides of the equation by the number under the variable

ex: $5 \cdot \frac{n}{5} = 10 \cdot 5$
$\boxed{n = 50}$

Problem Solving

1. Read the problem. Identify the question that is being asked and the key information in the problem.
2. Plan how you are going to solve the problem and estimate the answer.
3. Solve the problem using the strategy of your choice.
4. Check your answer. Make sure your answer is reasonable and compare it to your estimate. Label your answer with appropriate units.

Evaluate each expression for $a = 5$, $b = 12$, $c = 10$, & $d = 2$.

71. $2b - a$	72. $d(ab - c)$	73. $3 + \frac{b}{d}$
74. $\frac{4a}{b + 4d}$	75. $2a^2 - c$	76. $b - c + d$

Solve each one-step equation.

77. $g + 3 = 17$	78. $r - 6 = 7$	79. $6b = 18$	80. $\frac{h}{9} = 3$
81. $5 = f - 8$	82. $48 = 12b$	83. $a + 24 = 83$	84. $17 + x = 23$
85. $10 = \frac{m}{5}$	86. $86.5 = f - 7.63$	87. $\frac{n}{6} = 11$	88. $\frac{3}{4}h = 12$

Solve each word problem using the method of your choice.

89. A fencing company charges $22 per foot to install a wood fence. How much will it cost to install a wood fence around a rectangular pool area that is 20 feet wide and 38 feet long?

90. A 6 inch-tall plant grew ¾ of an inch one week and twice as much the following week. How tall is the plant now?

91. Jack can read 45 pages of his book in one and a half hours. At that rate, how long will it take him to read the entire 300-page book?

92. Brian ordered 3 large cheese pizzas and a salad. The salad cost $4.95. If he spent a total of $47.60 including the $5 tip, how much did each pizza cost? (Assume there is no tax).

93. A cookie recipe calls for $3\frac{1}{4}$ cups of flour. The recipe makes 3 dozen cookies. How much four is needed to make 144 cookies?

94. Ella has a box of chocolate candies. She gives $\frac{1}{3}$ of the candies to her sister, 4 to her brother, and she eats the remaining 12 candies. How many chocolate candies were in the box originally?

Solve each word problem using the method of your choice.

95. 20% of the 520 students in Wendover Middle School were involved in school sports. Of those students, 12.5% were on the wrestling team. How many students were on the wrestling team?

96. A piggy bank contains some dimes and nickels. There are 8 more dimes than nickels in the bank. There is a total of $1.40. How many of each type of coin are in the bank?

97. An elevator in a tall building goes up 7 floors, then down 9 floors, down 4 floors, up 8 floors, and down 2 floors. Now it is on floor 14. On what floor did the elevator start?

98. Jenna danced for 3 hours on Sunday, 2 hours on Monday and Tuesday, 1 hour on Thursday, 1.5 hours on Friday, and 2 hours on Saturday. She did not dance at all on Wednesday. What is the average number of hours she danced each day? Round your answer to the nearest tenth of an hour.

99. Jackie makes $15.25/hour babysitting. George makes $18.50/hour mowing the lawn. If Jackie babysits for 4 hours and George mows lawns for 3 hours, who makes more money? How much more does he/she make?

100. A box of 8 crayons costs $0.96. How much does each crayon cost? At that unit price, how much would a box of 30 crayons cost?

Answer Key

Find the sum. Write your answer in simplest form.

1. $\frac{1}{4} + \frac{1}{2}$ $\frac{3}{4}$	2. $\frac{2}{5} + \frac{1}{3}$ $\frac{11}{15}$	3. $\frac{7}{15} + \frac{3}{10}$ $\frac{23}{30}$	4. $\frac{11}{28} + \frac{4}{7}$ $\frac{27}{28}$
5. $\frac{3}{4} + \frac{1}{12}$ $\frac{5}{6}$	6. $\frac{9}{10} + \frac{13}{20}$ $1\frac{11}{20}$	7. $4\frac{15}{16} + 7\frac{3}{4}$ $12\frac{11}{16}$	8. $2\frac{16}{25} + 3\frac{18}{20}$ $6\frac{27}{50}$
9. $3\frac{2}{5} + 9\frac{1}{10}$ $12\frac{1}{2}$	10. $6\frac{1}{42} + 4\frac{5}{6}$ $10\frac{6}{7}$	11. $18\frac{7}{9} + 16$ $34\frac{7}{9}$	12. $4\frac{7}{8} + \frac{1}{3}$ $5\frac{5}{24}$

Find the difference. Write your answer in simplest form.

13. $\frac{7}{8} - \frac{1}{4}$ $\frac{5}{8}$	14. $\frac{13}{15} - \frac{1}{3}$ $\frac{8}{15}$	15. $\frac{7}{9} - \frac{2}{6}$ $\frac{4}{9}$	16. $\frac{21}{24} - \frac{3}{8}$ $\frac{1}{2}$
17. $\frac{3}{14} - \frac{1}{7}$ $\frac{1}{14}$	18. $\frac{9}{10} - \frac{1}{2}$ $\frac{2}{5}$	19. $9 - 4\frac{1}{12}$ $4\frac{11}{12}$	20. $12\frac{18}{25} - 8\frac{4}{5}$ $3\frac{23}{25}$
21. $5\frac{8}{9} - 3\frac{2}{3}$ $2\frac{2}{9}$	22. $8\frac{12}{16} - 7\frac{31}{32}$ $\frac{25}{32}$	23. $10\frac{3}{4} - 6\frac{4}{5}$ $3\frac{19}{20}$	24. $13\frac{7}{8} - \frac{10}{12}$ $13\frac{1}{24}$

Answer Key

Find the product. Write your answer in simplest form.

25. $\frac{1}{8} \cdot \frac{1}{7}$ $\frac{1}{56}$	26. $\frac{2}{9} \cdot \frac{12}{14}$ $\frac{4}{21}$	27. $\frac{7}{12} \cdot \frac{8}{14}$ $\frac{1}{3}$	28. $\frac{9}{24} \cdot \frac{16}{81}$ $\frac{2}{27}$
29. $\frac{3}{14} \cdot \frac{21}{33}$ $\frac{3}{22}$	30. $\frac{1}{2} \cdot \frac{9}{13}$ $\frac{9}{26}$	31. $2\frac{1}{6} \cdot \frac{3}{5}$ $1\frac{3}{10}$	32. $8\frac{4}{5} \cdot 1\frac{5}{11}$ $12\frac{4}{5}$
33. $2\frac{1}{2} \cdot \frac{2}{5}$ 1	34. $9\frac{2}{3} \cdot 6$ 58	35. $13\frac{1}{3} \cdot 2\frac{1}{10}$ 28	36. $7 \cdot \frac{1}{3}$ $2\frac{1}{3}$

Find the quotient. Write your answer in simplest form.

37. $\frac{5}{6} \div \frac{1}{4}$ $3\frac{1}{3}$	38. $\frac{1}{2} \div \frac{1}{4}$ 2	39. $\frac{3}{4} \div \frac{9}{12}$ 1	40. $\frac{21}{35} \div \frac{7}{25}$ $2\frac{1}{7}$
41. $\frac{6}{7} \div 3$ $\frac{2}{7}$	42. $\frac{2}{11} \div \frac{1}{33}$ 6	43. $1\frac{1}{4} \div 2\frac{1}{3}$ $\frac{15}{28}$	44. $5\frac{3}{6} \div 3$ $1\frac{5}{6}$
45. $10\frac{1}{4} \div \frac{2}{5}$ $25\frac{5}{8}$	46. $3\frac{2}{3} \div 1\frac{1}{7}$ $3\frac{5}{24}$	47. $4\frac{3}{8} \div \frac{9}{10}$ $4\frac{31}{36}$	48. $8 \div \frac{3}{4}$ $10\frac{2}{3}$

Answer Key

Find the sum or difference.

49. $6.2 + 3.4$ 9.6	50. $8.04 - 6.8$ 1.24	51. $12.4 + 0.899$ 13.299	52. $12.9 - 2.043$ 10.857
53. $163.29 + 13.987$ 177.277	54. $13 - 6.7$ 6.3	55. $3.91 + 1.93$ 5.84	56. $34.2 - 29.027$ 5.173

Find the product.

57. $9.2 \cdot 3.1$ 28.52	58. $(14.1)(2.7)$ 38.07	59. 91×4.5 409.5	60. 82.04×1.2 98.448
61. $(1.1)(6.78)$ 7.458	62. $45 \cdot 0.1$ 4.5	63. 0.010×13.9 0.139	64. $(2.34)(5.6)$ 13.104

Find the quotient.

65. $8.4 \div 2$ 4.2	66. $1.56 \div 1.3$ 1.2	67. $7.45 \div 2$ 3.725	68. $9 \div 0.8$ 11.25
69. $68 \div 3.4$ 20	70. $9.4 \div 0.2$ 47	71. $0.045 \div 0.15$ 0.3	72. $4 \div 0.3$ $13.\overline{3}$

Answer Key

Find the area and perimeter (or circumference) of each figure. Use 3.14 for π.

73.



$A = 55\ in^2$

$P = 32\ in$

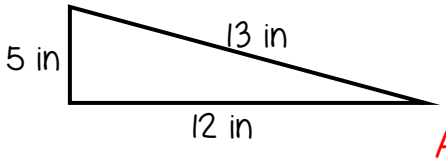
74.



$A = 48\ ft^2$

$P = 34\ ft$

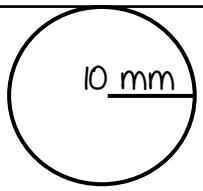
75.



$A = 30\ in^2$

$P = 30\ in$

76.

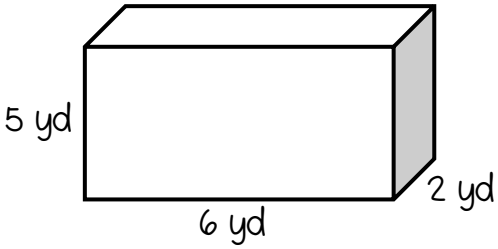


$A \approx 314\ mm^2$

$C \approx 62.8\ mm$

Find the volume.

77.



$V = 60\ yd^3$

Solve each word problem.

78. Danny is installing a fence around his rectangular yard. His yard is 20 feet long by 45 feet wide. If the fencing he picked out costs $25 per foot, how much money will Danny spend on the fence?

$3,250

79. Tameka wants to put a carpet in her rectangular bedroom. Her room is 22 feet long by 18 feet wide. How much carpeting will Tameka need?

$396\ ft^2$

80. Don wants to bring some sand home from his vacation at the beach. He has a box that is 3 inches wide, 4 inches long, and 2 inches tall. How much sand can he fit in the box?

$24\ in^3$

Answer Key

Solve each one-step equation for the given variable.

81. $x + 18 = 32$ $x = 14$	82. $18f = 720$ $f = 40$	83. $h - 56 = 57$ $h = 113$	84. $\frac{b}{6} = 12$ $b = 72$
85. $12 = r - 76$ $r = 88$	86. $33 + d = 65$ $d = 32$	87. $14m = 42$ $m = 3$	88. $10c = 5$ $c = \frac{1}{2}$
89. $38 = 19j$ $j = 2$	90. $w + 65 = 100$ $w = 35$	91. $r - 7 = 9$ $r = 16$	92. $x \div 12 = 9$ $x = 108$
93. $14 + x = 18$ $x = 4$	94. $\frac{p}{22} = 7$ $p = 154$	95. $47 = x - 5$ $x = 52$	96. $k + 16 = 76$ $k = 60$
97. $2 = 6m$ $m = \frac{1}{3}$	98. $t - 8 = 14$ $t = 22$	99. $\frac{h}{19} = 11$ $h = 209$	100. $47 = 18 + b$ $b = 29$

Answer Key

Evaluate each expression.

1. $5.983 + 2.99$ 8.973	2. $224 - 56.73$ 167.27	3. $6.12 - 4.923$ 1.197
4. $24.5 \cdot 3.2$ 78.4	5. $0.23 \cdot 7$ 1.61	6. $3.86 \cdot 9.15$ 35.319
7. $14.8 \div 5$ 2.96	8. $46.3 \div 1.5$ $30.8\overline{6}$	9. $147 \div 2.25$ $65.\overline{3}$
10. $24.33 - 2.5 \cdot 7$ 6.83	11. $3.9 + 4.5^2$ 24.15	12. $9.25(18.4 - 2 \cdot 1.2)$ 148

Solve each word problem, showing all work.

13. Jeff had \$46.18 in his wallet Monday morning. He gave half of his money to his brother. He then bought two donuts for \$0.75 each and a cup of coffee for \$2.99. How much money did Jeff have left? \$18.60	14. Five friends split a \$65.20 bill at a restaurant. They also each left \$2.75 for the tip. How much money did each person pay in all? \$15.79

Answer Key

Evaluate each expression.

15. $\frac{4}{5} + \frac{3}{4}$ $1\frac{11}{20}$	16. $4\frac{2}{7} + 2\frac{9}{14}$ $6\frac{13}{14}$	17. $8\frac{11}{12} + 9\frac{5}{18}$ $18\frac{7}{36}$
18. $6 - \frac{3}{8}$ $5\frac{5}{8}$	19. $8\frac{3}{5} - 2\frac{1}{3}$ $6\frac{4}{15}$	20. $4\frac{1}{6} - \frac{8}{9}$ $3\frac{5}{18}$
21. $\frac{4}{25} \cdot \frac{15}{16}$ $\frac{3}{20}$	22. $2\frac{3}{4} \cdot 8$ 22	23. $6\frac{5}{8} \cdot 3\frac{1}{2}$ $23\frac{3}{16}$
24. $\frac{7}{9} \div \frac{2}{3}$ $1\frac{1}{6}$	25. $\frac{4}{5} \div 10$ $\frac{2}{25}$	26. $5\frac{2}{3} \div 2\frac{5}{6}$ 2

Solve each word problem, showing all work.

27. Jaimie ran $3\frac{1}{2}$ miles on Monday. She ran half as far on Tuesday as she did on Monday. How far did Jaimie run in all on Monday and Tuesday? $5\frac{1}{4}$ miles	28. A $5\frac{1}{2}$ quart pot is filled $\frac{2}{3}$ of the way with water. How many more quarts of water can the pot hold? $1\frac{5}{6}$ quarts

Answer Key

Write each ratio in 3 ways.

29. A bank contains 15 pennies and 12 nickels. Write the ratio of nickels to pennies. 4:5, 4 to 5, $\frac{4}{5}$	30. A bowl contains 6 apples and some bananas. If there are a total of 10 pieces of fruit, find the ratio of apples to bananas. 3:2, 3 to 2, $\frac{3}{2}$

Convert each rate to a unit rate.

31. $4.25 for 64 fluid ounces $0.07 per floz	32. 297 miles on 11 gallons of gas 27 mi/gal	33. 124 feet in 10 seconds 12.4 ft/sec

Complete the chart by converting each number to a percent, fraction, and/or decimal.

	Fraction	Decimal	Percent
34.	$\frac{3}{8}$	0.375	37.5%
35.	$\frac{9}{20}$	0.45	45%
36.	$\frac{18}{25}$	0.72	72%
37.	$\frac{1}{10}$	0.1	10%
38.	$\frac{3}{200}$	0.015	1.5%

Find each percent of a number.

39. 30% of 90 27	40. 15% of 38 5.7	41. 50% of 86 43
42. 75% of 160 120	43. 24% of 35 8.4	44. 2% of 74 1.48

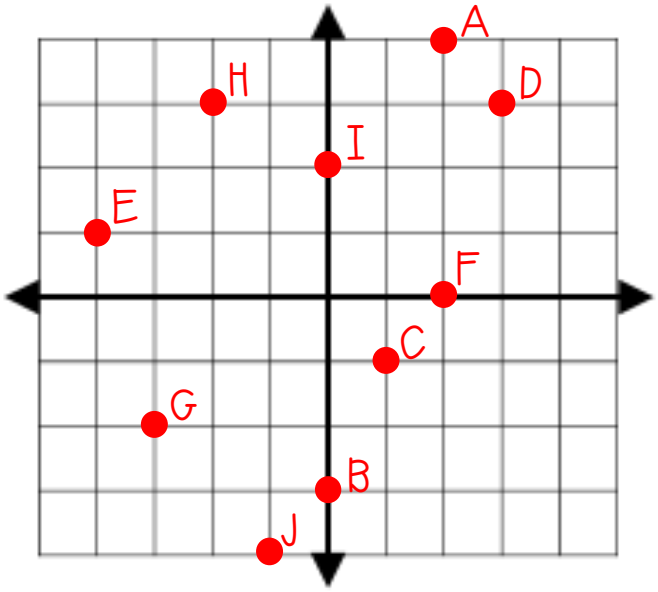
Answer Key

Compare the integers with <, >, or =.

45. -4 (>) -5	46. 2 (>) -2	47. $\lvert -5\rvert$ (=) $\lvert 5\rvert$	48. -7 (<) 6	49. -13 (<) -9
50. $\lvert -7\rvert$ (>) -6	51. -17 (<) -14	52. $\lvert -3\rvert$ (>) $\lvert -2\rvert$	53. 0 (>) -6	54. $\lvert -4\rvert$ (<) $\lvert 6\rvert$

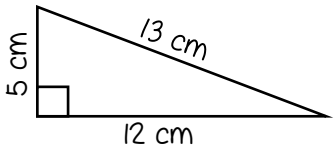
Graph and label each of the ordered pairs in the coordinate plane. Then state the quadrant or axis in/on which the point is located.

55. A(2, 4) Quadrant I	56. B(0, -3) y-axis
57. C(1, -1) Quadrant IV	58. D(3, 3) Quadrant I
59. E(-4, 1) Quadrant II	60. F(2, 0) x-axis
61. G(-3, -2) Quadrant III	62. H(-2, 3) Quadrant II
63. I(0, 2) y-axis	64. J(-1, -4) Quadrant III



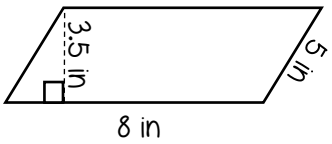
Find the perimeter, area, and/or volume of the given figure.

65. Find the perimeter & area:



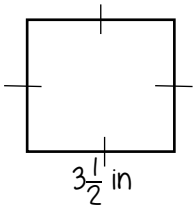
P = 30 cm
A = 30 cm^2

66. Find the perimeter & area:



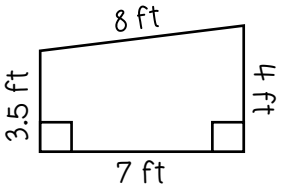
P = 26 in
A = 28 in^2

67. Find the perimeter & area:



P = 14 in
A = $12\frac{1}{4}$ in^2

68. Find the perimeter & area:



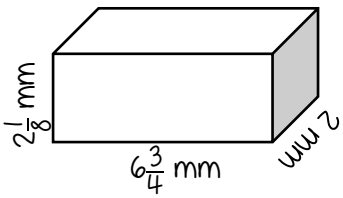
P = 22.5 ft
A = 26.25 ft^2

69. Find the area of a square with a perimeter of 45 cm

A = $126\frac{9}{16}$ cm^2

(or 126.5625 cm^2)

70. Find the volume:



V = $28\frac{11}{16}$ mm^3

Answer Key

Evaluate each expression for $a = 5$, $b = 12$, $c = 10$, & $d = 2$.

71. $2b - a$ 19	72. $d(ab - c)$ 100	73. $3 + \frac{b}{d}$ 9
74. $\frac{4a}{b + 4d}$ 1	75. $2a^2 - c$ 40	76. $b - c + d$ 4

Solve each one-step equation.

77. $g + 3 = 17$ $g = 14$	78. $r - 6 = 7$ $r = 13$	79. $6b = 18$ $b = 3$	80. $\frac{h}{9} = 3$ $h = 27$
81. $5 = f - 8$ $f = 13$	82. $48 = 12b$ $b = 4$	83. $a + 24 = 83$ $a = 59$	84. $17 + x = 23$ $x = 6$
85. $10 = \frac{m}{5}$ $m = 50$	86. $86.5 = f - 7.63$ $f = 94.13$	87. $\frac{n}{6} = 11$ $n = 66$	88. $\frac{3}{4}h = 12$ $h = 16$

Answer Key

Solve each word problem using the method of your choice.

89. A fencing company charges $22 per foot to install a wood fence. How much will it cost to install a wood fence around a rectangular pool area that is 20 feet wide and 38 feet long?

$2,552

90. A 6 inch-tall plant grew ¾ of an inch one week and twice as much the following week. How tall is the plant now?

$8\frac{1}{4}$ inches tall

91. Jack can read 45 pages of his book in one and a half hours. At that rate, how long will it take him to read the entire 300-page book?

10 hours

92. Brian ordered 3 large cheese pizzas and a salad. The salad cost $4.95. If he spent a total of $47.60 including the $5 tip, how much did each pizza cost? (Assume there is no tax).

$12.55

93. A cookie recipe calls for $3\frac{1}{4}$ cups of flour. The recipe makes 3 dozen cookies. How much four is needed to make 144 cookies?

13 cups of flour

94. Ella has a box of chocolate candies. She gives $\frac{1}{3}$ of the candies to her sister, 4 to her brother, and she eats the remaining 12 candies. How many chocolate candies were in the box originally?

24 chocolate candies

Answer Key

Solve each word problem using the method of your choice.

95. 20% of the 520 students in Wendover Middle School were involved in school sports. Of those students, 12.5% were on the wrestling team. How many students were on the wrestling team?

13 students

96. A piggy bank contains some dimes and nickels. There are 8 more dimes than nickels in the bank. There is a total of $1.40. How many of each type of coin are in the bank?

4 nickels & 12 dimes

97. An elevator in a tall building goes up 7 floors, then down 9 floors, down 4 floors, up 8 floors, and down 2 floors. Now it is on floor 14. On what floor did the elevator start?

the 14th floor

98. Jenna danced for 3 hours on Sunday, 2 hours on Monday and Tuesday, 1 hour on Thursday, 1.5 hours on Friday, and 2 hours on Saturday. She did not dance at all on Wednesday. What is the average number of hours she danced each day? Round your answer to the nearest tenth of an hour.

about 1.6 hours

99. Jackie makes $15.25/hour babysitting. George makes $18.50/hour mowing the lawn. If Jackie babysits for 4 hours and George mows lawns for 3 hours, who makes more money? How much more does he/she make?

Jackie makes $5.50 more than George.

100. A box of 8 crayons costs $0.96. How much does each crayon cost? At that unit price, how much would a box of 30 crayons cost?

$3.60



How to be a MATH PERSON:

Step 1:

Do math

(any type)

Step 2:

Be a person