

# THINGS YOU SHOULD KNOW

## Measurement Conversions:

Metric Length	Metric Weight	Metric Capacity
10 mm = 1 cm 100 cm = 1 m 1,000 mm = 1 m 1,000 m = 1 km	1 kg = 1,000 g 1 g = 1,000 mg	1 kL = 1,000 L 1 L = 1,000 mL
Standard Length	Standard Weight	Metric Capacity
1 mi. = 1,700 yd. 1 mi. = 5,280 ft. 1 yd. = 3 ft. 1 ft. = 12 in.	16 oz. = 1 lb. 1 T = 2,000 lbs.	1 gal = 4 qt. 1 gal = 128 fl oz. 1 qt. = 2 pts. 1 pt. = 2 c. 1 c. = 8 fl oz.

## Formulas:

Area of squares and rectangles:  $A = l \cdot w$

Volume of rectangular prisms:  $V = l \cdot w \cdot h$

## Order of Operations:

**P** : Parenthesis

**E** : Exponents

**MD** : Multiplication OR

Division (from left to right)

**AS** : Addition OR Subtraction

(from left to right)

## Decimal Operations:

	The Steps
Add	<ul style="list-style-type: none"> <li>Line up the decimals.</li> <li>Fill in empty spaces with a zero.</li> <li>Add.</li> <li>Drop the decimal down into your answer.</li> </ul>
Subtract	<ul style="list-style-type: none"> <li>Line up the decimals.</li> <li>Fill in empty spaces with a zero.</li> <li>Subtract.</li> <li>Drop the decimal down into your answer.</li> </ul>
Multiply	<ul style="list-style-type: none"> <li>Multiply as you normally would.</li> <li>Count the number of decimal places in the factors.</li> <li>The product should have the same number of decimal places as the factors.</li> </ul>
Divide	<ul style="list-style-type: none"> <li>Divide as you normally would.</li> <li>Float the decimal up into your answer.</li> </ul>

## Fraction Operations:

	The Steps
Add	<ul style="list-style-type: none"> <li>Re-write each fraction with the LCD.</li> <li>Add the numerators.</li> <li>Simplify.</li> </ul>
Subtract	<ul style="list-style-type: none"> <li>Re-write mixed numbers as improper fractions.</li> <li>Re-write each fraction with the LCD.</li> <li>Subtract the numerators.</li> <li>Simplify.</li> </ul>
Multiply	<ul style="list-style-type: none"> <li>Re-write mixed numbers as improper fractions.</li> <li>Multiply straight across.</li> <li>Simplify.</li> </ul>
Divide	<ul style="list-style-type: none"> <li>Re-write mixed numbers as improper fractions.</li> <li>Flip the second fraction.</li> <li>Change the division sign to multiplication.</li> <li>Multiply straight across.</li> <li>Simplify.</li> </ul>

# SIMPLIFYING EXPRESSIONS

**Directions:** Simplify each expression using the order of operations.

1)  $60 - (2 \cdot 4) - 9$

2)  $2[3 + 2(5 - 1)]$

3)  $10 + (6 \div 2) - 4$

4)  $6 + 2[5 + (2 \cdot 3)]$

5)  $6(2 + 3) - 3(8 - 2)$

6)  $15 + 3[2(5 + 4) - 2]$

7)  $2(5) - 10$

8)  $18 - 2[14 - 3(2)]$

9)  $2 + 14 \cdot 2 \div 4$

10)  $81 \div 27 \cdot (8 - 5)$

11)  $\frac{15 + 30}{6 - 1}$

12)  $24 - 2(9)$

13)  $4 + 2(3 \cdot 4)$

14)  $40 \div 4 \cdot (3 - 2)$

15)  $(16 - 4) \cdot 4 + 3$

16)  $120 - 5[2(3 \cdot 2) - 2]$



# WRITING EXPRESSIONS

**Directions:** Write an expression to represent each verbal phrase, you do not need to solve.

1) Subtract 9 and 2, then multiply by 4.  <b>Answer: <math>(9-2) \times 4</math> or <math>4(9-2)</math></b>	2) Divide 8 by 2 and then add 1.	3) Triple 4 and then add 6.
4) Add 2 and 8 and then multiply by 2.	5) Double 6 and then divide by 3.	6) Add 4, 6 and 13.
7) Subtract 9 and 2 and add 5.	8) 4 plus the product of 2 and 7.	9) The sum of 6 times 5 and 9 minus 2.
10) 8 less than the quotient of 20 and 5.	11) The product of 4 and triple the number 2.	12) Multiply 5 and 7 and then divide by 5.
13) The difference of four times four and six.	14) 4 more than the difference of 10 and 2.	15) 20 divided by the product of 2 and 4.



# WRITING EXPRESSIONS

**Directions:** Write an expression to represent each real-world situation. Do not solve.

1) You pay \$1.25 per pound for 3 pounds of apples.	2) Emma weighs 38 pounds. Gavin weighs 10 pounds less.	3) Four friends split a \$20 dinner bill.
4) There are 15 kids on a bus. 6 more get on.	5) You have \$13 on a gift card and spend \$9.50.	6) It takes 100 days to build a house. 3 weeks have passed.
7) You buy 5 DVDs for \$15 each.	8) Bill used a \$10 bill to pay for a \$4.65 cup of coffee.	9) Nina left a \$12 tip on a \$42.60 lunch bill.
10) There were 325 students in 6 <sup>th</sup> grade last year. There are 40 less this year.	11) A soccer team raised \$4,250 for charity last year. This year they raised \$575 more.	12) Tim pays a moving company \$50 per hour. They help him move for 9 hours.

# ➤➤ MULTI-DIGIT MULTIPLICATION

1)  $452 \cdot 82$

2)  $5,212 \cdot 40$

3)  $326 \cdot 30$

4)  $182 \cdot 63$

5)  $948 \cdot 45$

6)  $415 \cdot 12$

7)  $1,255 \cdot 81$

8)  $4,124 \cdot 22$

9)  $1,800 \cdot 45$

10) A box contains 32 candy bars. How many candy bars would be in a shipment of 563 boxes?

11) 164 books were sold in a bookstore today. If the same number were sold each day, how many books would be sold after 24 days?

12) A stadium has 1,200 rows of seats. Each row has 82 seats. How many people can fit in the stadium?



# MULTI-DIGIT DIVISION

1)  $186 \div 62$

2)  $525 \div 15$

3)  $896 \div 14$

4)  $288 \div 32$

5)  $688 \div 86$

6)  $156 \div 12$

7)  $1,232 \div 14$

8)  $540 \div 20$

9)  $720 \div 48$

10) A bag of candy contains 24 pieces. How many bags are needed for a school of 864 students if each student receives one piece?

11) Construction paper comes 16 sheets per pack. How many packs need to be purchased in order to get 224 pieces?

12) A theater has rows of 32 seats. How many rows are needed if 960 people attend a performance at the theater?



# SEQUENCES OF NUMBERS

1) Use the rule "add 2" to create a sequence of 5 numbers starting with 8

2) Use the rule "subtract 2" to create a sequence of 5 number starting with 8.

3) Use the rule "divide by 2" to create a sequence of 4 numbers starting with 40.

4) Use the rule "add 6" to create a sequence of 6 numbers starting with 14.

5) Use the rule "subtract 9" to create a sequence of 4 numbers starting with 50.

6) Use the rule "times 2" to create a sequence of 5 numbers starting with 3.

7) Use the rule "divide by 5" to create a sequence of 3 numbers starting with 50.

8) Use the rule "subtract 6" to create a sequence of 6 numbers starting with 100.

9) Use the rule "times 3" to create a sequence of 3 numbers starting with 2.

10) Use the rule "add 4" to create a sequence of 5 numbers starting with 11.



# POWERS OF TEN

1) What is the relationship between the exponent in $4.3 \cdot 10^3$ and 4,300?	2) What is the relationship between the exponent in $8.2 \div 10^2$ and 0.082?	3) What is the relationship between the exponent in $5 \cdot 10^6$ and 5,000,000?
4) Complete the pattern: $4.2 \cdot 10 = 4.2 \cdot 10^{\square} = \underline{\hspace{2cm}}$ $4.2 \cdot 10 \cdot 10 = 4.2 \cdot 10^{\square} = \underline{\hspace{2cm}}$ $4.2 \cdot 10 \cdot 10 \cdot 10 = 4.2 \cdot 10^{\square} = \underline{\hspace{2cm}}$		5) Is the multiplication sentence below true? Explain. $5.3 \cdot 10^4 = 530,000$
6) If $6 \cdot 3 = 18$ , then $600 \cdot 3 = ?$	7) $53.2 \cdot \underline{\hspace{1cm}} = 532,000$	8) If $400 \cdot 5 = 2,000$ , then what is $400 \cdot 500$ ?
9) Simplify $7.95 \cdot 10^3$	10) Simplify $6,000,000 \div 10^3$	11) Simplify $4.02 \cdot 10^2$
12) Simplify $7.95 \div 10^3$	13) Simplify $6,000,000 \cdot 10^3$	14) If $40 \cdot 200 = 8,000$ , then $2,000 \cdot 40 = ?$



# ➤➤➤ MEASUREMENT CONVERSIONS

1) How many quarts are in 9 gallons?	2) How many gallons are in 44 quarts?	3) How many cups are in 6 pints?
4) How many feet are in 3.5 yards?	5) How many centimeters are in $5\frac{1}{2}$ meters?	6) How many quarts are in 2.5 gallons?
7) How many pints are in 4 quarts?	8) How many inches are in $2\frac{3}{4}$ yards?	9) How many centimeters are in $3\frac{1}{2}$ meters?
10) How many meters are in 450 centimeters?	11) How many yards are in 38 inches?	12) How many gallons are in 10 quarts?
13) How many pints are in 4 gallons?	14) How many pints are in 40 ounces?	15) How many feet are in 2.4 yards?

**For #1 – 2:** Create a line plot with the given information.

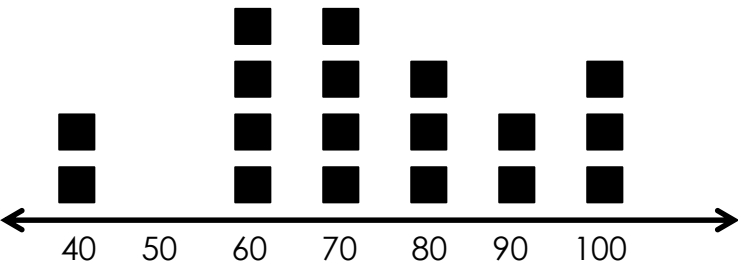
1. The ages of kids in an art club:  
 6, 8, 9, 8, 7, 10, 8, 9, 7, 7, 6, 9, 10, 10, 8, 8



2. The height of flowers in a garden:  
 12, 16, 17, 15, 16, 14, 15, 16, 17, 14, 14, 16, 19, 12, 14, 17



Use the line plot below to answer # 3 – 5.



3. The line plot shows test scores for a 10 question quiz. How many students scored higher than 70%?

4. How many students got a perfect score?

5. How many students scored 60% or lower?



# ROUNDING DECIMALS

1) Round 15.435 to the nearest tenth.	2) Round 567.065 to the nearest hundredth.	3) Round 874.32 to the nearest ten.
4) Round 4.623 to the nearest whole number.	5) Round 0.7845 to the nearest hundredth.	6) Round 71.963 to the nearest tenth.
7) Round 6.8245 to the nearest tenth.	8) Round 182.675 to the nearest hundred.	9) Round 42.96 to the nearest ten.
10) Round 18.096 to the nearest whole number.	11) Round 14.6734 to the nearest hundredth.	12) Round 28.946 to the nearest tenth.
13) Round 104.642 to the nearest tenth.	14) Round 13.811 to the nearest whole number.	15) Round 23.462 to the nearest hundredth.



# ADDING DECIMALS

1) $13.2 + 6.84$	2) $19.12 + 0.45$	3) $9.326 + 1.42$	4) $20.6 + 320.86$
5) $12.89 + 4$	6) $5.032 + 9.6$	7) $15.5 + 3.04$	8) $16.32 + 19.404$
9) You buy 2.67 pounds of apples and 4.9 pounds of oranges. How many pounds of fruit did you buy?		10) Emma grew 2.6 inches last summer and 1.89 during the school year. How much did she grow over the last year?	
11) Gina has three rolls of ribbon. One roll has 12.6 inches, the second has 18.24 inches long and the last has 19.05 inches of ribbon. How much ribbon does she have?		12) Mark ran 5.23 miles yesterday, 6.4 miles today and will run 2.14 miles tomorrow. How far will he run over the three days?	



# SUBTRACTING DECIMALS

1)  $15.2 - 6.25$

2)  $9.35 - 0.6$

3)  $10.362 - 1.2$

4)  $30.5 - 3.23$

5)  $12.9 - 8.2$

6)  $8 - 0.25$

7)  $15.5 - 3$

8)  $16.32 - 8.1$

9) Your lunch bill is \$13.14. A friend pays \$6.99. How much is left to pay?

10) You cut a 2.675 foot section from an 8.9 foot piece of wood. How much is left?

11) Ryan bought 5.67 pounds of candy and ate 2.9 pounds. How much is left?

12) Travis has a \$20 gift card. He spent \$9.62 and then another \$2.49. How much is left on the gift card?



# MULTIPLYING DECIMALS

1)  $3.2 \cdot 4.6$

2)  $8.9 \cdot 4.1$

3)  $6.2 \cdot 3.9$

4)  $8.2 \cdot 0.4$

5)  $6.12 \cdot 4.3$

6)  $9.86 \cdot 0.2$

7)  $4.32 \cdot 0.15$

8)  $62.3 \cdot 1.4$

9)  $5.82 \cdot 1.6$

10)  $13.45 \cdot 2.2$

11)  $20.04 \cdot 8.4$

12)  $50.4 \cdot 0.22$

13) Veronica ran 2.5 times around a 4.62 mile course. How far did she run?

14) A car drove 5 times around a 3.67 mile track. How far did it travel?



# DIVIDING DECIMALS

1)  $13.2 \div 6$

2)  $9.4 \div 2$

3)  $8.3 \div 5$

4)  $29.2 \div 4$

5)  $25.2 \div 5$

6)  $6.4 \div 8$

7)  $10.35 \div 9$

8)  $30.4 \div 8$

9) A 32.34 inch piece of ribbon is cut into 6 pieces. How long is each piece?

10) A 14.24 pound bag of cheese is split among 5 pizzas. How much cheese is on each pizza?

11) An 8.2 pound bag of candy is shared equally among 10 teachers. How much candy did each teacher get?

12) A 6.5 foot long piece of wood is cut into 5 sections. How long is each section?



# COMPARE & ORDER DECIMALS

1) Use $<$ , $>$ , or $=$ to compare the two numbers.  4.5 _____ 4.420	2) Use $<$ , $>$ , or $=$ to compare the two numbers.  0.67 _____ 0.8	3) Use $<$ , $>$ , or $=$ to compare the two numbers.  0.125 _____ 0.2
4) Use $<$ , $>$ , or $=$ to compare the two numbers.  0.82 _____ 0.820	5) Use $<$ , $>$ , or $=$ to compare the two numbers.  62.4 _____ 6.24	6) Use $<$ , $>$ , or $=$ to compare the two numbers.  5.23 _____ 5.3
7) Put the numbers in order from least to greatest.  0.3, 0.13, 0.32, 0.303	8) Put the numbers in order from least to greatest.  8.2, 0.82, 0.8, 0.08	9) Use $<$ , $>$ , or $=$ to compare the two numbers.  9.62 _____ 9.504
10) Put the numbers in order from greatest to least.  24.4, 24.54, 24.304, 24.24	11) Put the numbers in order from greatest to least.  6.05, 6.007, 6.5, 6.25	12) Use $<$ , $>$ , or $=$ to compare the two numbers.  1.324 _____ 1.42
13) Put the numbers in order from greatest to least.  0.2, 0.02, 0.22, 0.022	14) Put the numbers in order from greatest to least.  5.14, 5.4, 5.04, 5.1, 5.41	15) Put the numbers in order from least to greatest.  2.96, 2.9, 2.609, 2.906, 2.6





# ADDING FRACTIONS

1)  $\frac{1}{2} + 6\frac{2}{3}$

2)  $\frac{5}{8} + 2$

3)  $\frac{9}{10} + 3\frac{1}{2}$

4)  $4\frac{1}{5} + 6\frac{1}{2}$

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

6)  $9\frac{1}{3} + 4\frac{5}{6}$

7)  $\frac{11}{12} + \frac{3}{4}$

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

9) Jake ran  $3\frac{1}{2}$  miles Saturday and  $4\frac{5}{6}$  miles Sunday. How far did he run over the weekend?

10) Three sixth grade classes had a pizza party. They ate  $4\frac{3}{4}$ ,  $5\frac{1}{6}$  and  $6\frac{3}{8}$  pizzas. How much pizza did they eat altogether?



# SUBTRACTING FRACTIONS

1)  $8\frac{1}{2} - 4\frac{1}{5}$

2)  $6\frac{3}{4} - 2\frac{1}{8}$

3)  $5\frac{3}{5} - 1\frac{1}{3}$

4)  $10\frac{4}{5} - 3\frac{1}{2}$

5)  $9\frac{7}{8} - \frac{2}{3}$

6)  $15\frac{9}{10} - 4\frac{5}{8}$

7)  $8\frac{2}{3} - 5\frac{1}{5}$

8)  $4\frac{5}{6} - 1\frac{1}{8}$

9) You cut a  $2\frac{1}{3}$  foot section from an  $8\frac{1}{2}$  foot long piece of wood. How much is left?

10) Wayne ran  $3\frac{1}{2}$  miles out of a  $9\frac{2}{3}$  mile race. How much further does he have left to run?



# MULTIPLYING FRACTIONS

1)  $\frac{2}{5} \cdot \frac{7}{10}$

2)  $\frac{2}{3} \cdot 8$

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

4)  $10 \cdot \frac{4}{5}$

5)  $3\frac{1}{2} \cdot 4$

6)  $6\frac{1}{8} \cdot 2\frac{1}{2}$

7)  $4\frac{2}{3} \cdot 6\frac{1}{4}$

8)  $5\frac{1}{2} \cdot 5\frac{1}{2}$

9)  $8\frac{1}{3} \cdot 2\frac{1}{4}$

10)  $3\frac{3}{5} \cdot 6\frac{1}{5}$

11)  $9\frac{1}{2} \cdot 1\frac{7}{10}$

12)  $\cdot 8 \cdot 2\frac{1}{2}$

13) You ran  $4\frac{1}{2}$  times around a  $2\frac{1}{4}$  mile track.  
How far did you run?

14) A car drove  $5\frac{3}{5}$  times around a  $2\frac{1}{8}$  mile track. How far did the car travel?

# DIVIDING FRACTIONS

1)  $\frac{2}{5} \div 8$

2)  $\frac{5}{6} \div 4$

3)  $\frac{7}{8} \div 2$

4)  $\frac{9}{10} \div 4$

5)  $3\frac{1}{2} \div 5$

6)  $6\frac{1}{5} \div 2$

7)  $9\frac{1}{3} \div 3$

8)  $5\frac{2}{5} \div 2$

9) You split  $8\frac{1}{2}$  pounds of strawberries equally among 5 containers. How many pounds of strawberries are in each container?

10) A  $12\frac{1}{5}$  inch long piece of ribbon is cut into 4 pieces. How long is each piece?

11) A  $4\frac{9}{10}$  foot long piece of wood is cut into 6 sections. How long is each section?

12) A  $12\frac{2}{3}$  pound bag of chocolate is split equally among 20 boxes. How much chocolate is in each box?



# AREA OF QUADRILATERALS

**Directions:** Find the area of each shape. Figures are not drawn to scale.

1)



4 in.

9 in.

2)



6.5 ft.

3)



2.15 cm

8 cm

4)



$4\frac{3}{4}$  in.

$12\frac{1}{2}$  in.

5)



3.4 m

6.8 m

6)



2.9 yd.

15 yd.

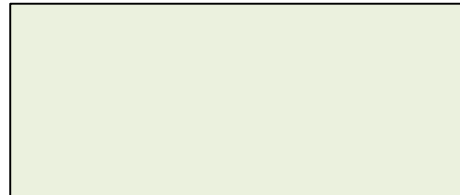
7)



8 in.

$8\frac{1}{4}$  in.

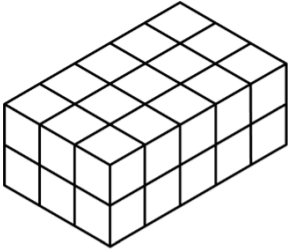
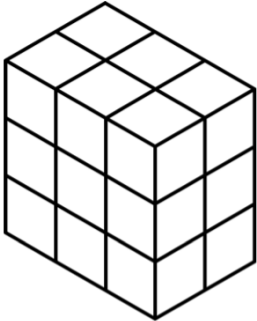
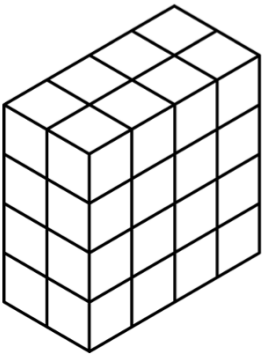
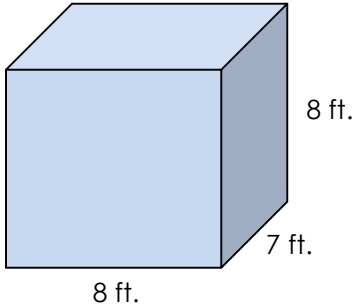
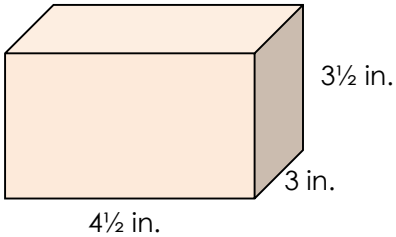
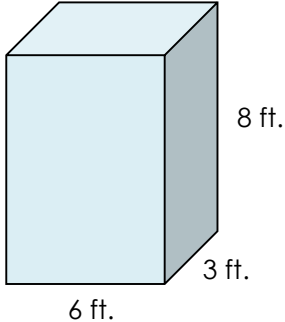
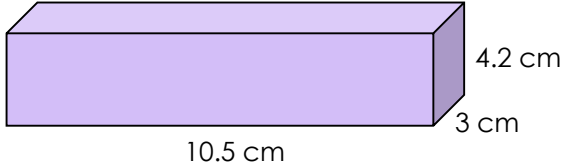
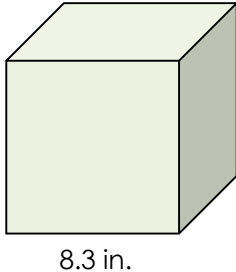
8)



$4\frac{1}{4}$  ft.

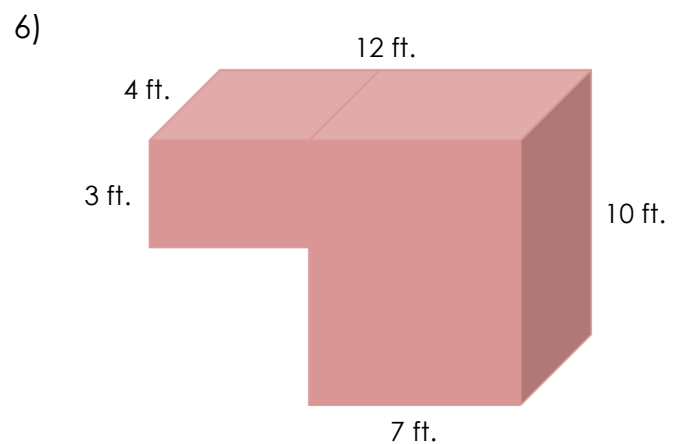
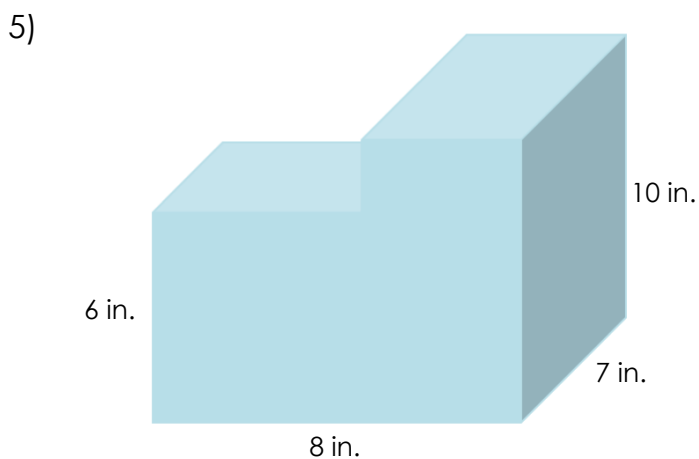
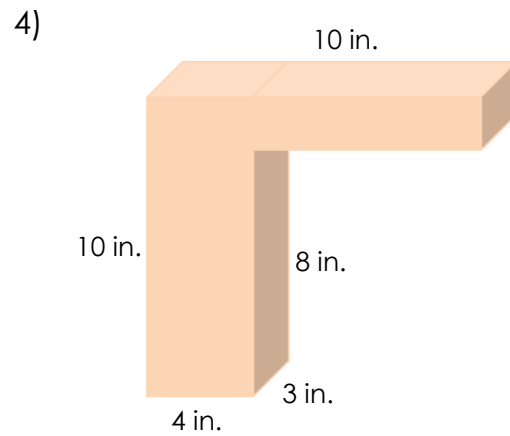
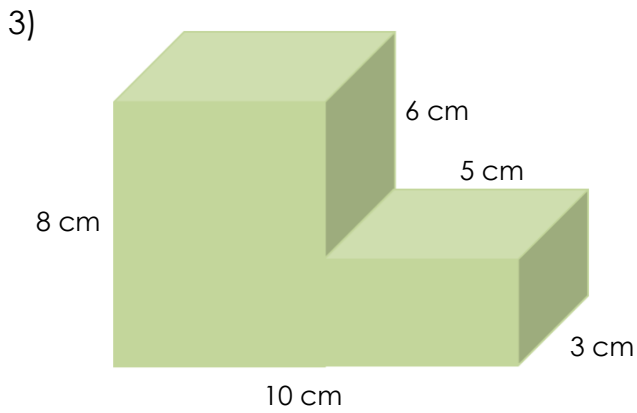
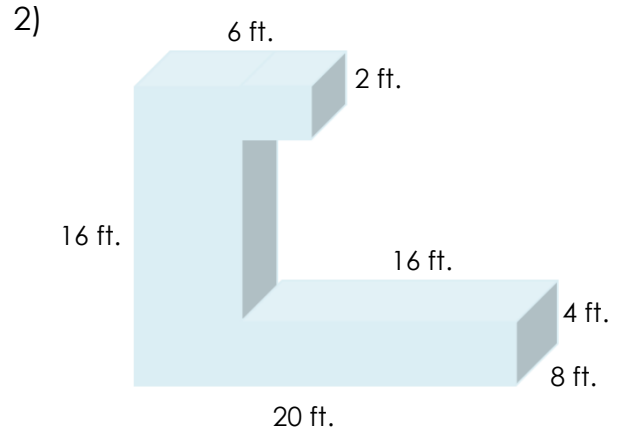
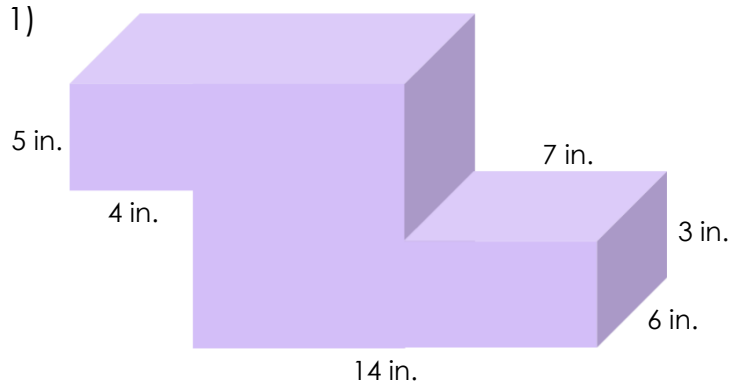
$10\frac{3}{5}$  ft.

**Directions:** Find the volume of each figure. Figures are not drawn to scale.

<p>1)</p> 	<p>2)</p> 
<p>3)</p> 	<p>4)</p> 
<p>5)</p> 	<p>6)</p> 
<p>7)</p> 	<p>8)</p> 

# >> VOLUME OF COMPOSITE FIGURES

**Directions:** Find the volume of each figure. Figures are not drawn to scale.





# CLASSIFYING SHAPES

1) Is there a difference between a parallelogram and a trapezoid? Either explain in words or draw to prove your answer.

2) Is a rectangle also a square? Explain.

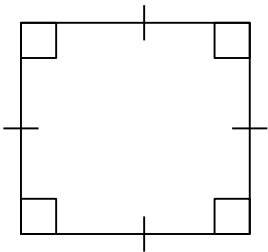
3) What shape has two pair of parallel lines? (There could be more than one correct answer).

4) Draw two regular polygons.

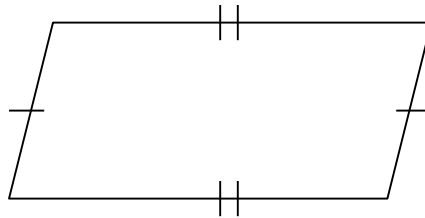
5) Identify the characteristics of a triangle.

6) What shape has two pair of parallel lines and four right angles? (There could be more than one correct answer).

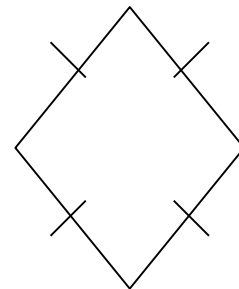
7) Classify the shape below.  
Use all terms that correctly identify the shape.



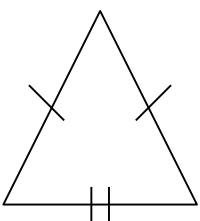
8) Classify the shape below.  
Use all terms that correctly identify the shape.



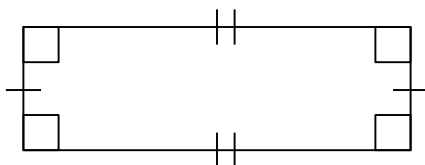
9) Classify the shape below.  
Use all terms that correctly identify the shape.



10) Classify the shape below.  
Use all terms that correctly identify the shape.



11) Classify the shape below.  
Use all terms that correctly identify the shape.



12) Classify the shape below.  
Use all terms that correctly identify the shape.

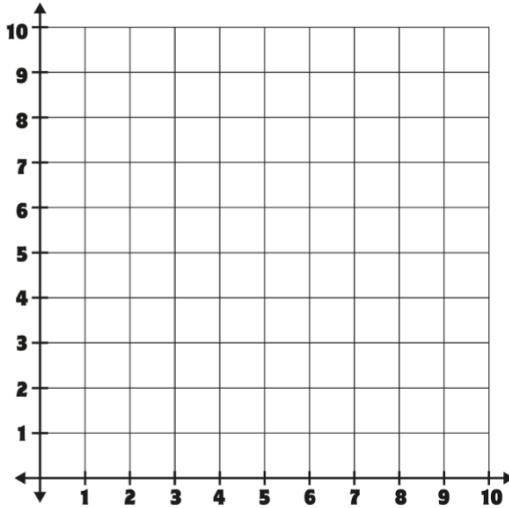




# COORDINATE PLANES

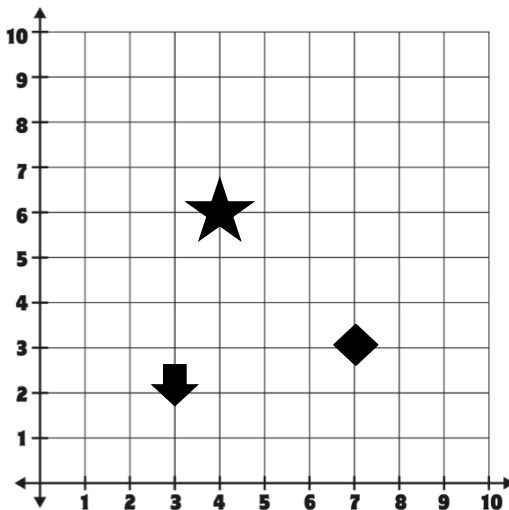
1) Plot the following points.

- A. (2, 3)
- B. (4, 1)
- C. (6, 3)
- D. (4, 5)

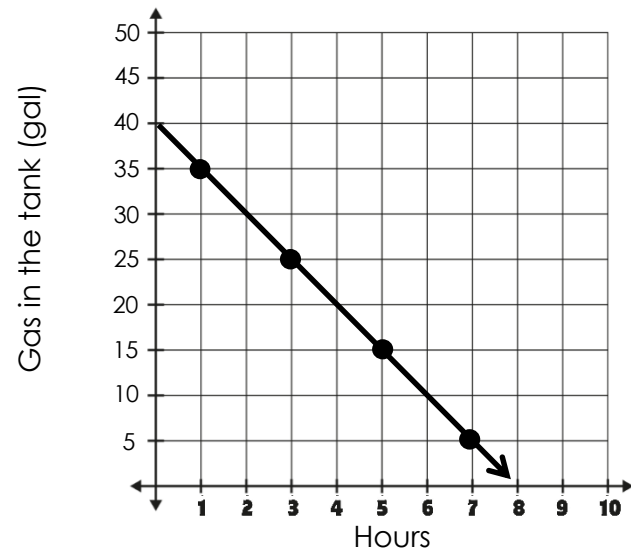


2) If you start at point (2, 2) and move right 3, then up 5, where do you end up?

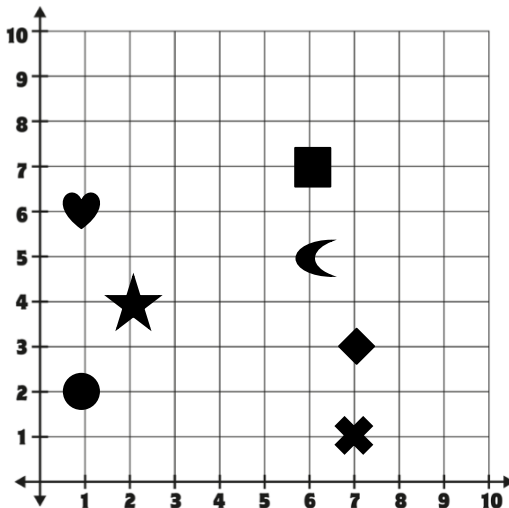
3) Which shape is closest to the point (2, 5)?



4) Based on the graph below, how much gas is left in the tank after 4 hours?



5) What shape is at (6, 7)?



6) What are the coordinates of the heart?

