

6th Enriched Math to
7th Pre-Algebra
Summer 2023

Rising 6th to 7th grader,

It is important to keep your math skills sharp. The attached packet was created to not only help you review 6th grade math skills but also help make the transition to 7th grade easier. To provide the maximum benefit, it would be best to complete one page (front/back) a week for 8 weeks of your choice over the course of the summer. I realize that things come up and some weeks it may not be possible to complete a page but there are more weeks in your summer than pages in this packet.

The material in this packet should be review and as such you should be able to complete almost all of the work independently.

The summer packet is due the first **full** day of school in August. Make sure to **document your thinking, work should be completed on these pages**. If you need more room, attach your work. You can expect at the minimum a grade to be taken and possibly an assessment given over the material in the packet.

Please feel free to email me if you have questions about the content of this packet.

Have a great summer!

Ms. Savage

Complete below:

Mathematician: _____

Please indicate how you completed your summer work:

_____ Independently

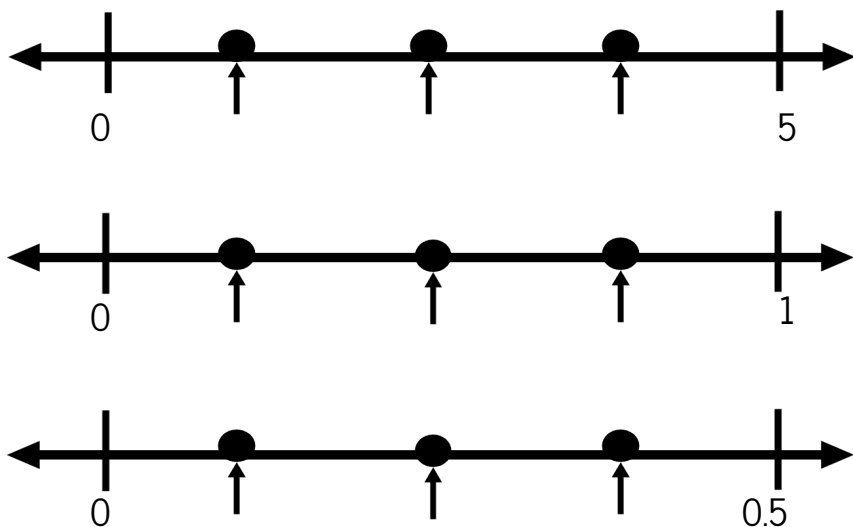
_____ Independently, with a little outside help

_____ Received help from parent/sibling/etc to complete

_____ Worked with a tutor to complete summer work

Name of tutor:_____

What's the point?



Number String - Use what you know to answer:

4×25	
8×25	
10×25	
15×25	
20×25	
19×25	

Sums & Products Find a pair of numbers that add & multiply to given numbers.

Sum of	Product of	
7	12	
10	16	
15	54	
10	25	

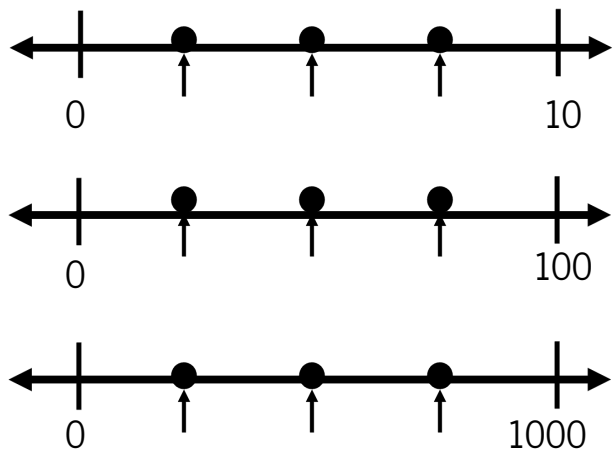
Two Truths and a Lie

Select the one that is not true and explain your reasoning.

- a.) The opposite of -2 is 2.
- b.) The absolute value of 2 is -2.
- c.) A number and its opposite is equally far from 0.

Explain:

What's the point?



Area Maze Solve to find x . Not drawn to scale.

7 units

56 units ²	77 units ²
40 units ²	x

Answer:

Find the pattern. Use the information to fill in the blanks.

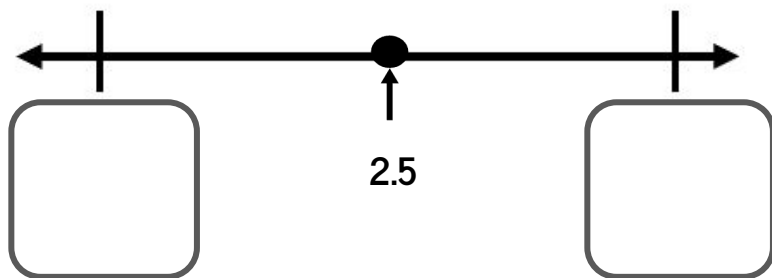
2	4		10		20	24		100	150	
3		9		24			45			600

Is it more or less than 0.5 Estimate and document how you know.

More	6×0.02	Less	More	$13 - 0.9$	Less	More	$87.1 - 86.9$	Less	More	$11 \div 8.1$	Less
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Is this the end?

Notice the number the arrow is pointing to. What are the endpoints?



Explain why you picked those endpoints.

What it takes to make...

Select two numbers of the following numbers to make each statement true.

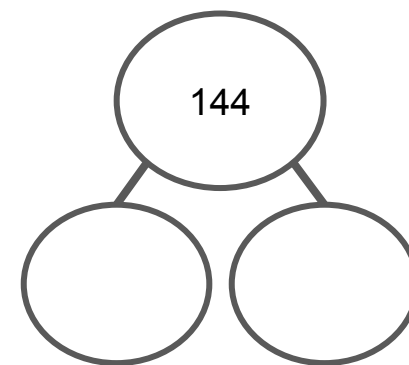
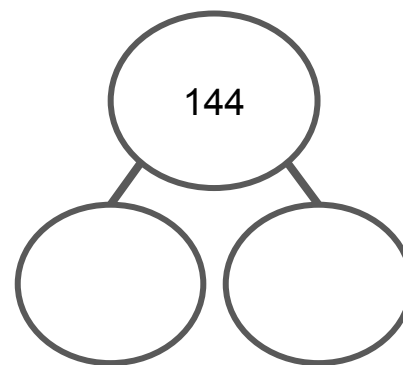
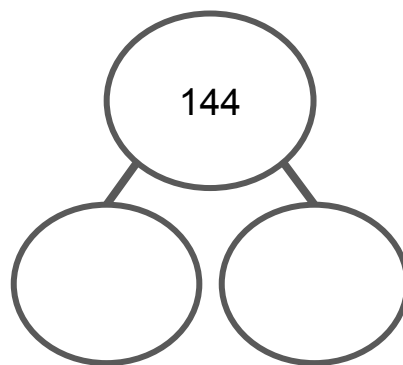
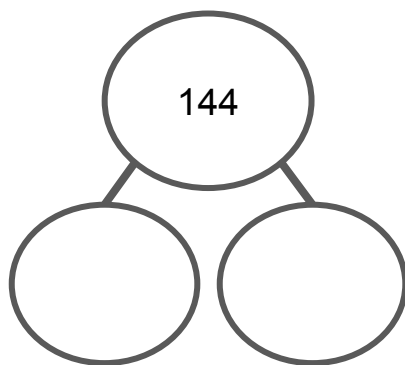
1.3 2.7 4.8 5.3 7.2 9.0

A sum around 10:

An even product:

The smallest difference:

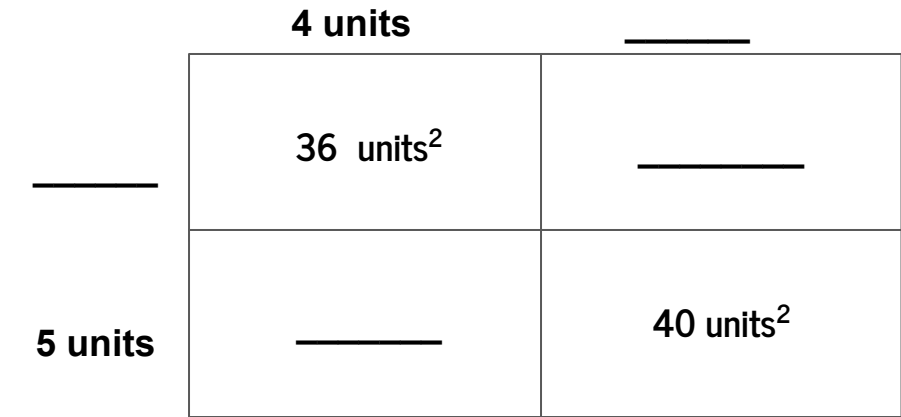
Broken Numbers - Using multiplication & division decompose the number given in different ways.



Two Columns - Is column A or column B greater or is it too close to call? Use estimation to decide, circle the larger, if it is too close to call circle both.

Column A	Column B
$1389 - 497$	$219 + 687$
19×7	21×8
$700 \div 76$	$523 \div 25$

Area Maze Use what you know to figure out the missing parts. Figure not drawn to scale.



Switcharoo Make up and write a word problem that has the following number as the answer:

4 ¼ lbs

If I know this...

If I know $\frac{1}{4} = 0.25$ $\frac{1}{8} = 0.125$ $\frac{1}{16} = 0.0625$

What is $\frac{3}{8}$ as a decimal?

What is $\frac{4}{16}$ as a decimal?

What is $\frac{5}{8}$ as a decimal?

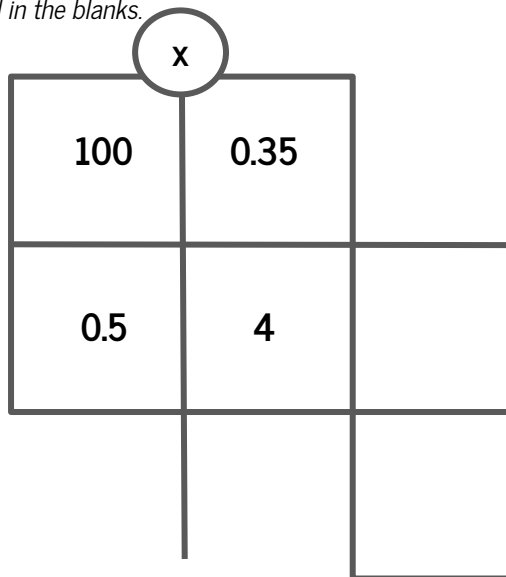
Sums & Products Find a pair of numbers that add & multiply to given numbers.

Sum of	Product of	
5	6	
8	12	
9	8	
13	30	
20	100	

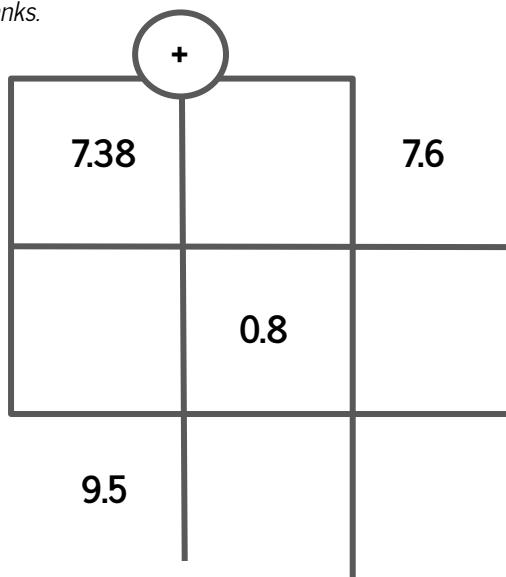
Number String - Use what you know to answer:

10 x 32	
5 x 32	
11 x 32	
20 x 32	
19 x 32	
25 x 32	
50 x 32	

Two Ways Use multiplication thinking - across and down - to fill in the blanks.



Two Ways Use addition thinking - across and down- to fill in the blanks.



Math Today - Take today's date, use the numbers to create a true mathematical equation.
For example: 05/01/2022 could be $50 \times 2 \times 2 = 10 \times 20$

Math Squares Four numbers in the square, add to the number underneath, fill in the blanks.

$\frac{1}{6}$	$\frac{1}{6}$
$\frac{3}{6}$	$\frac{1}{6}$

Math Square Four numbers in the square, add to give your number underneath, fill in the blanks.

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

3

4

Math Squares Four numbers in the square, add to give your number underneath, fill in the blanks.

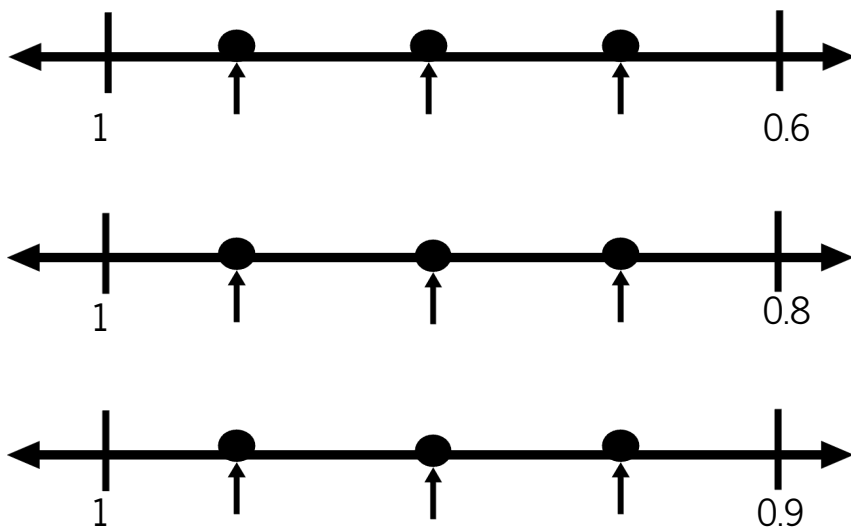
$\frac{1}{10}$	$\frac{3}{10}$
$\frac{3}{10}$	

1

Number line - Use the numbers given to complete the number line



What's the point?



Number String - Use what you know to answer:

3×80	
3×3	
3×83	
23×2	
23×10	
23×12	

Sums & Products Find a pair of numbers that add & multiply to given numbers.

Sum of	Product of	
11	24	
10	24	
25	24	
14	24	

Two Truths and a Lie

Select the one that is not true and explain your reasoning.

Greater than 50:

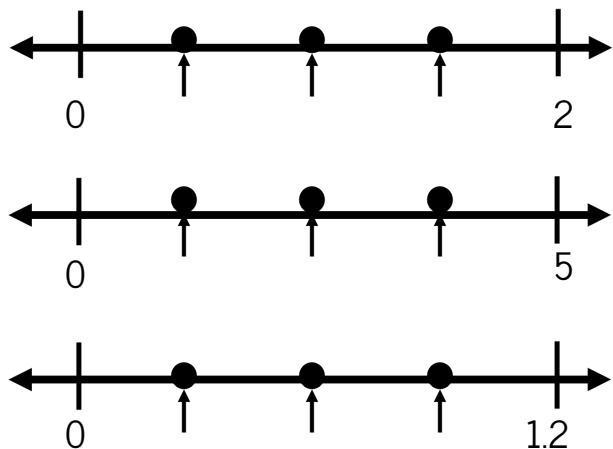
a.) $\frac{2}{3} \times 90$

b.) $\frac{3}{8} \times 120$

c.) $\frac{4}{5} \times 65$

Explain:

What's the point?



Area Model Use an area model to multiply: $7(3x + 5)$ & $2(5x + 4)$

7	3x	5	Answer:
2	5x	4	Answer:

Find the pattern. Use the information to fill in the blanks.

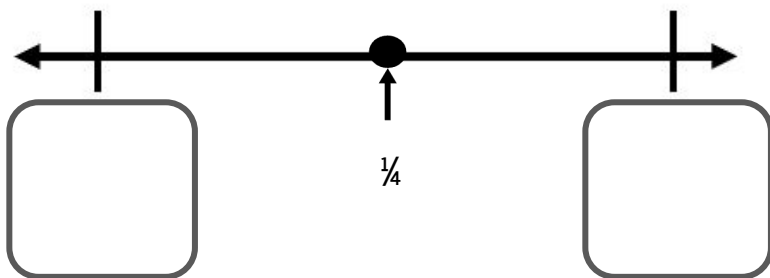
5	10	15		40		55		100	150	
6			24		54		72			660

Is it more or less than **0.5** Estimate and document how you know.

More 4×0.5 Less	More $2.9 - 2.09$ Less	More $0.26 + 0.251$ Less	More $6.1 \div 12.5$ Less
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Is this the end?

Notice the number the arrow is pointing to. What are the endpoints?

**What is takes to make...**

Select two numbers of the following numbers to make each statement true.

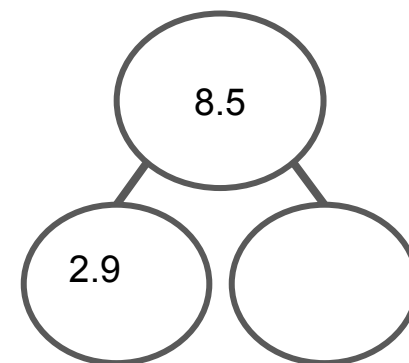
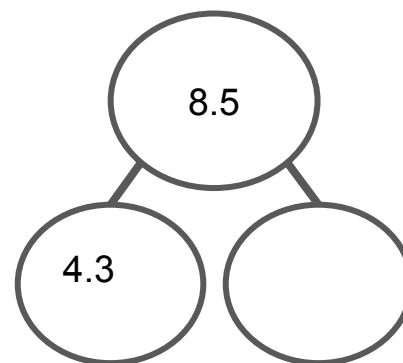
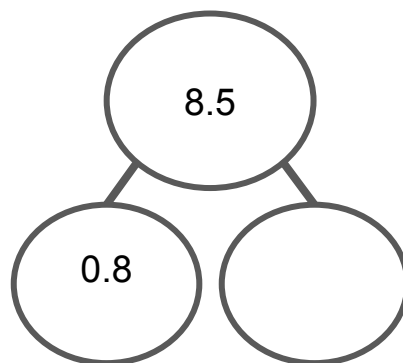
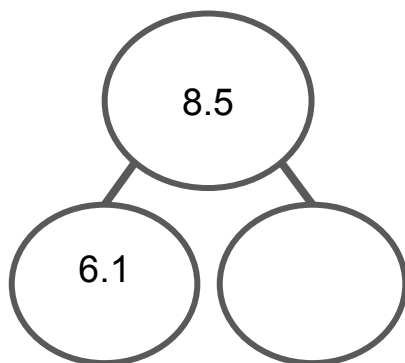
0.6 3.6 4.2 7.2 8

The smallest difference:

The biggest product:

The smallest quotient::

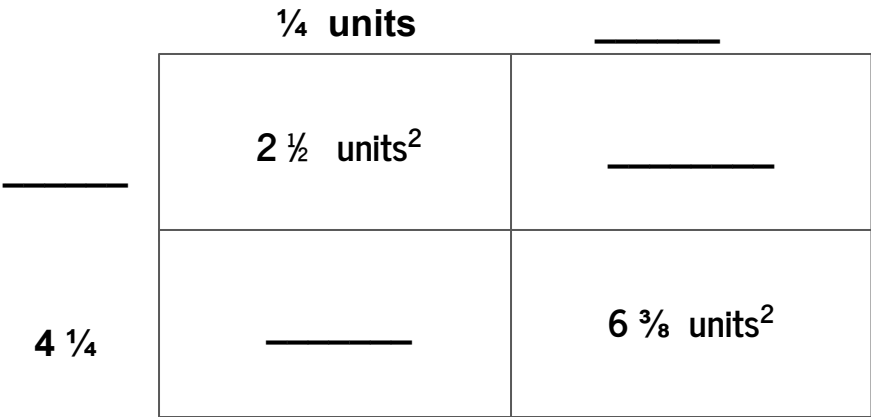
Broken Numbers - Using addition and subtraction, decompose the number given in different ways.



Two Columns - Is column A or column B greater or is it too close to call? Use estimation to decide, circle the larger, if it is too close to call circle both.

Column A	Column B
0.2×0.4	0.3×2
$24.1 + 15.9$	$43.5 - 4.9$
$12.6 \div 2$	$3 \div 0.4$

Area Maze Use what you know to figure out the missing parts. Figure not drawn to scale.



Switcharoo Write the word problem that has the following number as the answer:

5.5 ft

If I know this...

If I know $\frac{1}{4} = 0.25$ $\frac{1}{8} = 0.125$ $\frac{1}{16} = 0.0625$

What is $\frac{7}{8}$ as a decimal?

What is $\frac{5}{16}$ as a decimal?

What is $\frac{9}{16}$ as a decimal?

Sums & Products <i>Find a pair of numbers that add & multiply to given numbers.</i>		
Sum of	Product of	
16	15	
16	28	
12	32	
15	36	
17	42	

Number String - <i>Use what you know to answer:</i>		
7 - 5.7		=1.3
7.1 - _____		=1.3
7.2 - _____		=1.3
6.2 - _____		=1.3
4.5 - _____		=1.3
3.1 - _____		=1.3
2 - _____		=1.3

Two Ways *Use multiplication thinking - across and down - to fill in the blanks.*

x

15

0.2

0.3

9

Two Ways *Use addition thinking - across and down- to fill in the blanks.*

+

0.679

0.7

0.019

0.68

Benchmark Percent - Complete the percent table and use the benchmarks to find other percentages.

100%	50%	25%	5%	2 ½ %	1%
60					

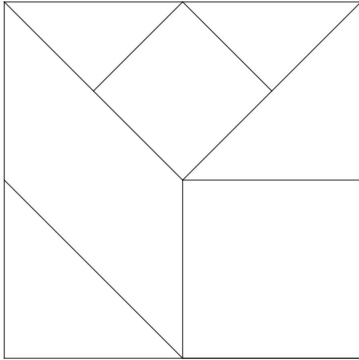
30% = _____

75% = _____

11% = _____

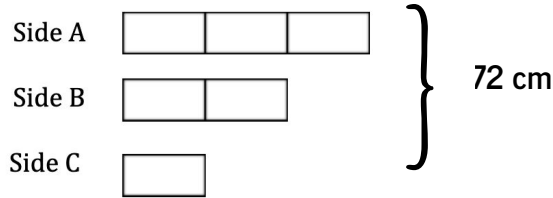
49% = _____

Fractions - Shade in one of the regions in this square. What fraction of the big square did you shade?



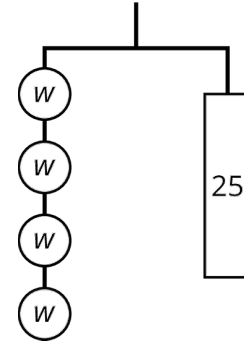
Explain.

Ratios - The sides of a triangle are in the ratio 3: 2: 1. If the perimeter (all the sides together) is 72 cm, find the length of each side.

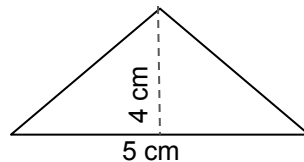
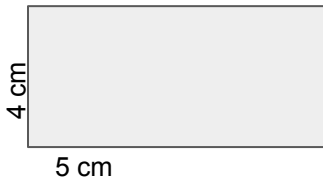


A: _____ B: _____ C: _____

Equations - Write the equation shown on this hanger. Then use properties of equality to solve.



Geometry: Miles says the area of his rectangle is 20 cm^2 . Cory says his triangle is also 20 cm^2 . After looking at both shapes, Cory changes his mind, saying, "I forgot to do one thing." What do you have to remember about finding areas of triangles?



Positive & Negative Numbers - What positive or negative number is represented by each situation:

A loss of 5 yards on the football field: _____

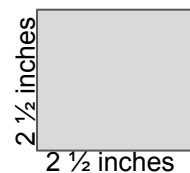
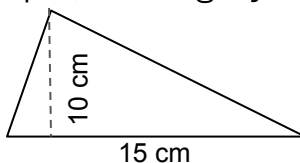
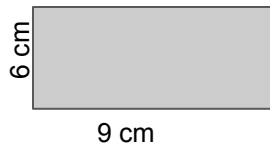
A gain of \$10: _____

20 feet below sea level: _____

You owe \$15: _____

An increase of 20° : _____

Geometry: Find the area of the following shape (don't forget your units):



Rates: If gasoline costs \$3.00 per gallon and your car has a 16-gallon tank that is $\frac{3}{4}$ empty, how much will it cost to fill the tank?

Rates: If gasoline costs \$1.25 per gallon and your car has a 16-gallon tank that is $\frac{3}{4}$ empty, how much will it cost to fill the tank?

Exponents: Simplify.

$$2^4$$

$$5^3$$

$$8^2$$

$$10^3$$

Decimal Arithmetic: Add, Subtract, Multiply or Divide.

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

$$6 - 2\frac{5}{6}$$

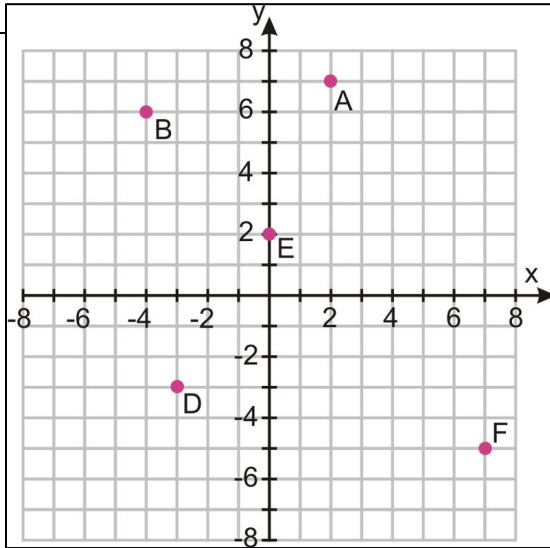
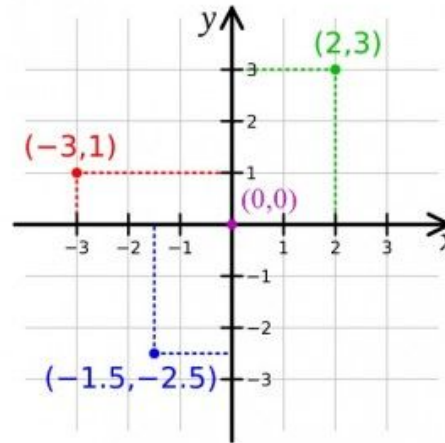
$$1.5 \bullet 0.8$$

$$1.2 \div 0.03$$

GCF or LCM: A red light blinks every 15 seconds, a white light blinks every 10 seconds. At the start of 10 minutes they both blink at the same time, how often will they blink together in that 10 minute time frame?

Coordinate Plane: Remember, when you graph in a coordinate plane, use ordered pairs (x,y). The first number tells you how to move on the x-axis either left or right. The second number tells you how to move on the y-axis either up or down.

For example, look at the point (-3,1). -3 tell you to move left three from the origin (0,0) and then 1 tells you to move up one.



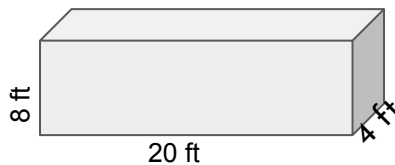
Use the coordinate plane to the left, to identify the coordinate for each point:

A (____, ____) B (____, ____)

C (____, ____) D (____, ____)

E (____, ____) F (____, ____)

Geometry: Volume= length x width height. Find the volume of the rectangular prism:



Volume: _____ ft³

Exponents: Simplify.

$$2^4$$

$$6^3$$

$$10^5$$

Decimal Arithmetic: Add, Subtract, Multiply or Divide.

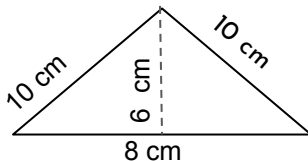
$$14.56 + 3.67$$

$$8.9 - 4.98$$

$$32 \bullet 5.08$$

$$12.78 \div 0.9$$

Geometry: Find the area & perimeter of the following shape (remember units).



Area: _____ Perimeter: _____

Sums & Products: The product of the ages of two dogs is 156. The sum of their ages is 25. How old are the two dogs?

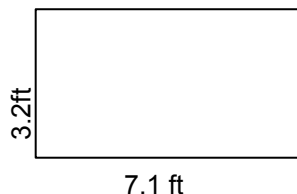
Algebra: Solve the equation, use properties of equality:

$$x - 0.17 = 8.2$$

$$\frac{x}{18} = 6$$

Geometry: What is the perimeter of a square whose area is 144 cm^2 ?

Geometry: Find the area & perimeter of the following shape (remember units):



Area: _____ Perimeter: _____

Fraction Arithmetic: Add, Subtract, Multiple or Divide.

$$3\frac{1}{2} + 0.4$$

$$3\frac{1}{2} - 0.4$$

$$3\frac{1}{2} \bullet 0.4$$

$$3\frac{1}{2} \div 0.4$$

Decimal Arithmetic: Leah collected 2,400 grams of pennies in a fundraiser. Each penny has a mass of 2.5 grams. How much money did Leah raise?

Positive & Negative Numbers:

Fill in the blank with $<$, $>$ or $=$

$3.2 \underline{\hspace{1cm}} -5$

$-5 \underline{\hspace{1cm}} 8$

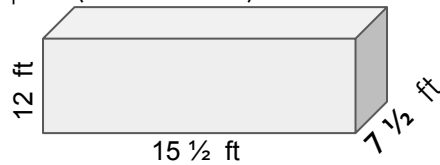
$7.2 \underline{\hspace{1cm}} 7.02$

$\frac{2}{3} \underline{\hspace{1cm}} \frac{5}{6}$

$-8.1 \underline{\hspace{1cm}} -8$

$|-6| \underline{\hspace{1cm}} 6$

Geometry: Volume= length x width height. Find the volume of the rectangular prism (remember units):



Volume:

Algebra: Solve the equation, use properties of equality.

$x - 7 = 20$

$x + 12 = 20$

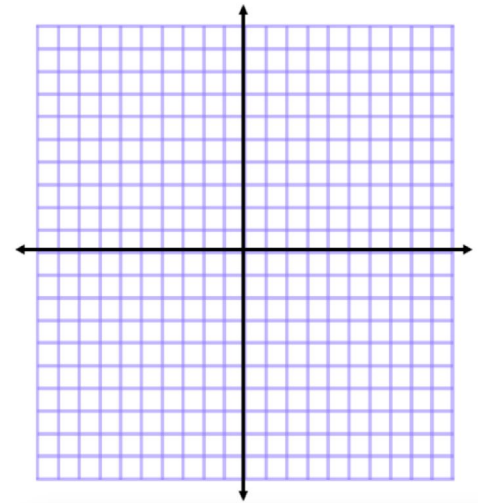
$\frac{2}{3}x = 12$

$3x = 14$

$\frac{x}{3} = 12$

Sums & Products:

What is the sum of the whole number factors of 12?



a square that is in only two quadrants, label the vertices A, B, C & D

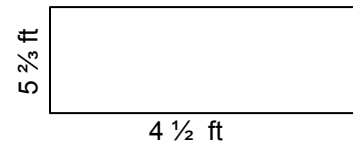
A (,)

B (,)

C (,)

D (,)

Geometry: Find the area & perimeter of the following shape (remember units):



Area:

Perimeter: