



Blessed  
Sacrament  
School

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2510 Greengarden Road • Erie, PA 16502-2199 • (814) 455-1387 • FAX (814) 461-0247

Dear Parents:

This is your child's summer math packet. It is intended to strengthen and reinforce the math skills that were taught in 6<sup>th</sup> grade.

Please have your child work on it throughout the summer. *Students are not to use calculators.* Your son or daughter will hand in the completed packet in the first week of school. This math packet will be graded.

Thank you for your cooperation.

Sincerely,

*Mrs. Kunik*

Mrs. Kunik

# THINGS YOU SHOULD KNOW:

## CONVERSIONS:

100 centimeters = 1 meter

12 inches = 1 foot

3 feet = 1 yard

8 ounces = 1 cup

2 cups = 1 pint

2 pints = 1 quart

4 quarts = 1 gallon

## 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)

## FRACTIONS:

To find a common denominator, find the least common multiple of the denominators in the problem.

## DECIMALS:

Line up decimals when adding and subtracting.  
Count decimal places when multiplying.



# UNIT RATE

Determine each unit rate.



Example  
 $\$3/1b$

lbs.	Total Cost (\$)
0	0
1	3
2	6
3	9

Day	# of Guests
1	100
2	200
3	300
4	400

Day	Cupcakes Sold
0	0
1	2
2	4
3	6

lbs.	Total Cost (\$)
0	0
2	3
4	6
6	9

Day	Tickets Sold
1	30
2	60
3	90
4	120

Boxes	Cost (\$)
0	0
2	10
4	20
6	30

Day	Cookies Made
0	0
3	30
6	60
9	90

Bags	Total Cost (\$)
1	5
2	10
3	15
4	20

Kids	Total Spent (\$)
10	20
20	40
30	60
40	80

Kids	Teachers
5	1
10	2
15	3
20	4

lbs.	Total Cost (\$)
0	0
4	2
8	4
12	6

Day	Number Sold
0	0
5	40
10	80
15	120

# MEASUREMENT CONVERSIONS

Convert each measurement. Round to the nearest tenth.

<p>Example</p> <p>Convert to inches. {12 feet}</p> $\begin{array}{r} 12 \\ \times 12 \\ \hline 24 \\ + 12 \\ \hline 144 \end{array}$ <p>144 in.</p>	<p>Convert to feet. {5 yards}</p>	<p>Convert to centimeters. {420 meters}</p>
<p>Convert to yards. {30 feet}</p>	<p>Convert to inches. {10.5 feet}</p>	<p>Convert to gallons. {28 quarts}</p>
<p>Convert to feet. {8 inches}</p>	<p>Convert to inches. {3.5 yards}</p>	<p>Convert to cups. {2 quarts}</p>
<p>Convert to gallons. {12 quarts}</p>	<p>Convert to feet. {11 yards}</p>	<p>Convert to cups. {7 pints}</p>
<p>Convert to yards. {40 inches}</p>	<p>Convert to inches. {30 feet}</p>	<p>Convert to meters. {150 centimeters}</p>

# GCF & LCM

Find the GCF and/or LCM.



<p><u>Example</u> Find the GCF.</p> <p>44 &amp; 14</p> <p> <math display="block">\begin{array}{r} 44 \\ \swarrow \downarrow \\ 4 \text{ (11)} \\ \swarrow \downarrow \\ 2 \text{ (2)} \end{array}</math> <math display="block">\begin{array}{r} 14 \\ \swarrow \downarrow \\ 2 \text{ (7)} \\ \swarrow \downarrow \\ 2 \end{array}</math> </p> <p>GCF = 2</p>	<p>Find the GCF and LCM.</p> <p>5 &amp; 8</p> <p>GCF : _____</p> <p>LCM : _____</p>	<p>Find the GCF.</p> <p>20 &amp; 15</p>
<p>Find the GCF and LCM.</p> <p>4 &amp; 6</p> <p>GCF : _____</p> <p>LCM : _____</p>	<p>Find the GCF.</p> <p>30 &amp; 40</p>	<p>Find the GCF and LCM.</p> <p>16 &amp; 6</p> <p>GCF : _____</p> <p>LCM : _____</p>
<p><u>Example</u> Find the LCM.</p> <p>4, 21, 24</p> <p> <math display="block">\begin{array}{r} 4 \\ \swarrow \downarrow \\ 2 \text{ (2)} \\ \swarrow \downarrow \\ 2^2 \end{array}</math> <math display="block">\begin{array}{r} 21 \\ \swarrow \downarrow \\ 3 \text{ (7)} \\ \swarrow \downarrow \\ 3 \cdot 7 \end{array}</math> <math display="block">\begin{array}{r} 24 \\ \swarrow \downarrow \\ 4 \text{ (6)} \\ \swarrow \downarrow \\ 2^3 \cdot 3 \end{array}</math> </p> <p>LCM = <math>2^3 \cdot 3 \cdot 7 = 168</math></p>	<p>Find the GCF and LCM.</p> <p>12 &amp; 4</p> <p>GCF : _____</p> <p>LCM : _____</p>	<p>Find the LCM.</p> <p>3 &amp; 5</p>
<p>Find the GCF and LCM.</p> <p>30 &amp; 6</p> <p>GCF : _____</p> <p>LCM : _____</p>	<p>Find the LCM.</p> <p>14, 20, 30</p>	<p>Find the GCF and LCM.</p> <p>6 &amp; 12</p> <p>GCF : _____</p> <p>LCM : _____</p>

# add & SUBTRACT decimals

Find each sum or difference.

Example  $13.2 + 6.84$  Add 0

$$\begin{array}{r} 13.20 \\ + 6.84 \\ \hline 20.04 \end{array}$$

Bring down the decimal

$19.12 + 0.45$

Example  $10.362 - 1.2$  Add 0s

$$\begin{array}{r} 10.362 \\ - 1.200 \\ \hline 9.162 \end{array}$$

Bring down the decimal.

$30.5 - 3.23$

$12.89 + 4.9$

$5.032 + 9.6$

$15.5 - 3$

$16.32 - 8.1$

You buy 2.67 pounds of apples and 4.9 pounds of oranges. How many pounds of fruit did you buy?

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

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?

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

# MULTIPLY & divide decimals

Find each product or quotient.

<p>Example <math>3.2 \cdot 4.6</math></p> <p>Decimals</p> $\begin{array}{r} 3.2 \\ \times 4.6 \\ \hline 192 \\ 128 \\ \hline 14.72 \end{array}$ <p>① +① ②</p>	$8.9 \cdot 4.1$	<p>Example <math>28.3 \div 5.1</math></p> $\begin{array}{r} 5.5 \\ 5.1 \overline{) 28.30} \\ \underline{-255} \\ 280 \\ \underline{-255} \\ 25 \end{array}$	$29.2 \div 4$
$6.12 \cdot 4.3$	$9.86 \cdot 0.2$	$10.35 \div 9$	$30.4 \div 2.8$
$5.82 \cdot 1.6$	$13.45 \cdot 2.2$	<p>A 14.24 pound bag of cheese is split among 5 pizzas. How much cheese is on each pizza?</p>	
<p>Veronica ran 2.5 times around a 4.62 mile course. How far did she run?</p>		<p>A 6.5 foot long piece of wood is cut into 5 sections. How long is each section?</p>	

# add & subtract fractions

Find each sum or difference.

Example  $\frac{1 \times 3}{2 \times 3} + 6 \frac{2 \times 2}{3 \times 2}$

$$\frac{3}{6} + 6 \frac{4}{6}$$

$$6 \frac{7}{6} \text{ * more than } \frac{6}{6}$$

$$\textcircled{7 \frac{1}{6}}$$

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

Example  $5 \frac{3 \times 3}{5 \times 3} - 1 \frac{1 \times 5}{3 \times 5}$

$$5 \frac{9}{15} - 1 \frac{5}{15}$$

$$\textcircled{4 \frac{4}{15}}$$

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

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

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

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

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

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

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

Find each product.

<p>Example</p> $\frac{2}{5} \cdot \frac{7}{10}$ $\frac{7}{25}$	$\frac{2}{3} \cdot 8$	$\frac{7}{8} \cdot \frac{2}{3}$	$\frac{3}{10} \cdot \frac{1}{4}$
$3\frac{1}{2} \cdot 4$	$6\frac{1}{8} \cdot 2\frac{1}{2}$	$3\frac{1}{3} \cdot 4\frac{3}{4}$	$5\frac{2}{5} \cdot \frac{9}{10}$
$8\frac{1}{3} \cdot 2\frac{1}{4}$	$3\frac{3}{5} \cdot 6\frac{1}{5}$	<p>Kim has four pieces of ribbon that are each <math>12\frac{1}{5}</math> inches long. How much ribbon does she have altogether?</p>	
<p>You ran <math>4\frac{1}{2}</math> times around a <math>2\frac{1}{4}</math> mile track. How far did you run?</p>		<p>Sasha has six boxes of chocolate that each weigh <math>16\frac{1}{8}</math> ounces. How much chocolate does she have altogether?</p>	

# dividing fractions

Find each quotient.



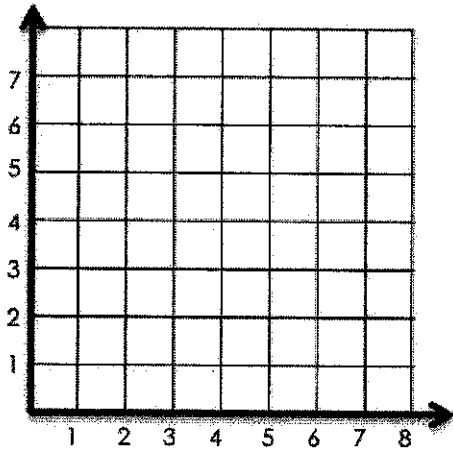
<p>Example <math>\frac{2}{5} \div \frac{8}{1}</math> Keep Change Flip</p> <p><del><math>\frac{2}{5}</math></del> <del><math>\frac{1}{8}</math></del> 4</p> <p><math>\frac{1}{20}</math></p>	$\frac{5}{6} \div 4$	$\frac{7}{8} \div 2$	$\frac{9}{10} \div 4$
$3\frac{1}{2} \div 5$	$6\frac{1}{5} \div 2$	$9\frac{1}{3} \div 3$	$5\frac{2}{5} \div 2$
$5\frac{1}{2} \div \frac{3}{5}$	$\frac{7}{10} \div \frac{1}{3}$	$10\frac{1}{4} \div \frac{2}{5}$	$\frac{11}{12} \div \frac{1}{6}$
<p>A <math>4\frac{9}{10}</math> foot long piece of wood is cut into 6 sections. How long is each section?</p>	<p>You split <math>8\frac{1}{2}</math> pounds of strawberries equally among 5 containers. How many pounds of strawberries are in each container?</p>		

# COORDINATE PLANES

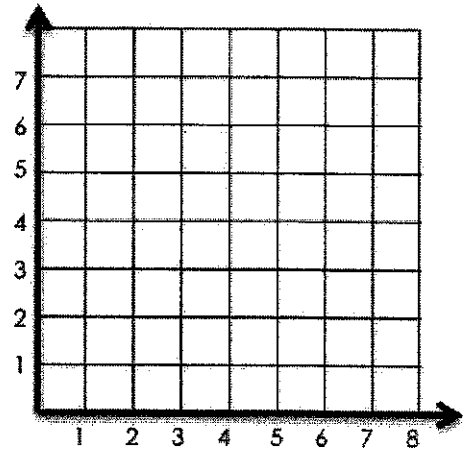
$(x, y)$   
*x* tells you how far right to go  
*y* tells you how far up to go.

Plot the following points.

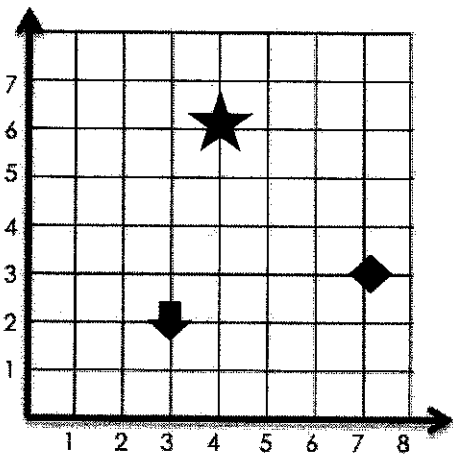
- (2, 3)
- (4, 1)
- (6, 3)
- (4, 5)



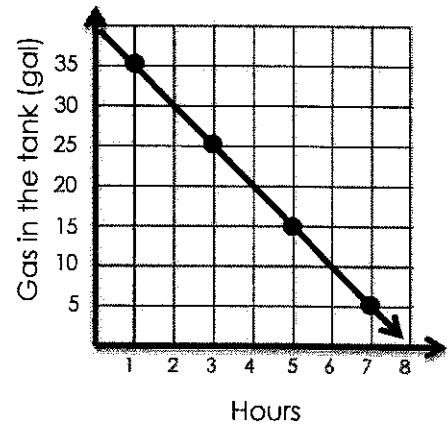
If you start at point (2, 2) and move right 3, then up 5, where do you end up?



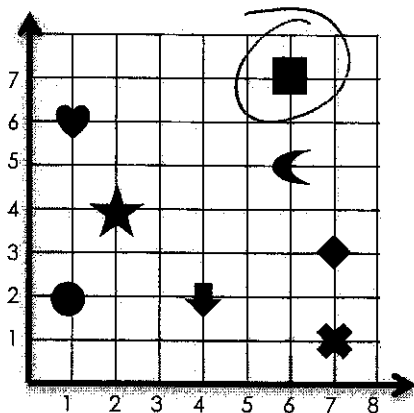
Which shape is closest to the point (2, 5)?



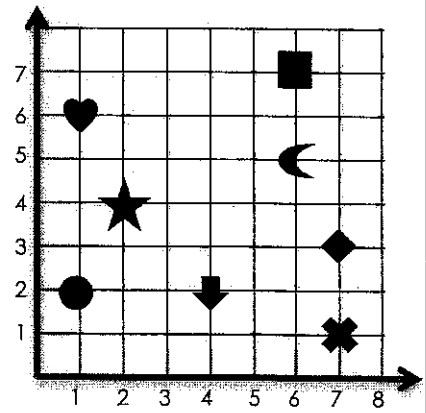
Based on the graph below, how much gas is left in the tank after 4 hours?



*Example* What shape is at (6, 7)?



What are the coordinates of the heart?



# ORDERING RATIONAL NUMBERS

Put the given numbers in order.

Put the following numbers in order from least to greatest.

*Examples*

0.3, 0.13, 0.32, 0.303

0.13, 0.3, 0.303, 0.32

Put the following numbers in order from greatest to least.

6.05, 6.007, 6.5, 6.25

Put the following numbers in order from greatest to least.

8.2, 0.82,  $\frac{4}{5}$ , 0.08

Put the following numbers in order from least to greatest.

$-3\frac{1}{2}$ ,  $2\frac{1}{2}$ ,  $2\frac{10}{11}$ ,  $-2\frac{1}{2}$

Put the following numbers in order from least to greatest.

$-5.2$ , 5.04,  $-5.42$ ,  $-5$ , 5.14

Put the following numbers in order from least to greatest.

$-2$ , 2.2,  $-2.2$ ,  $-2.02$ , 2

Put the following numbers in order from greatest to least.

$-\frac{2}{5}$ , 2.5,  $-0.42$ ,  $-2.2$ , 0.22

Put the following numbers in order from greatest to least.

$\frac{1}{5}$ , 0.02,  $\frac{11}{50}$ , 0.022

# ORDER OF OPERATIONS

Simplify each expression.

*Example*

$$260 - (2 \cdot 4)^2 - 9$$

$$260 - (8)^2 - 9$$

$$260 - 64 - 9$$

$$196 - 9$$

$$187$$

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

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

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

$$6(2 + 3) - 3^3$$

$$5^2 + 3[2(5 + 4)^4 - 2]$$

$$(2 \cdot 5)^2 - 10$$

$$8^2 - 2[4 - 2(2)]$$

$$2^4 + 14 \cdot 2 \div 4$$

$$9^2 \div 3^3 \cdot (8 - 5)^2$$

$$\frac{(5 + 3)^2}{6 - 2}$$

$$4^3 - 2(9)$$

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

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

$$(16 - 4)^2 \cdot 4 + 3^2$$

$$10^2 - 2[2(3 \cdot 2)]$$

# EVALUATING EXPRESSIONS

Read each problem carefully.

<p>If <math>x = 4</math>, evaluate:</p> <p><i>Example</i></p> $4x - 8$ $4 \cdot 4 - 8$ $16 - 8$ $\textcircled{8}$	<p>If <math>x = -4</math>, evaluate:</p> $-3 - x$	<p>If <math>x = \frac{1}{2}</math>, evaluate:</p> $6(x + 2)$
<p>If <math>x = 2.5</math>, evaluate:</p> $x - 6$	<p>If <math>x = 10</math>, evaluate:</p> $2(-x + 5)$	<p>If <math>x = -\frac{1}{4}</math>, evaluate:</p> $\frac{3}{4}x$
<p>If <math>x = -3</math>, evaluate:</p> $3 + x - 5x$	<p>If <math>x = \frac{2}{3}</math>, evaluate: <math>3x + 8</math></p>	<p>If <math>x = -5.5</math>, evaluate:</p> $-8x$
<p>If <math>x = 8.2</math>, evaluate:</p> $-x + 2x$	<p>If <math>x = -1</math>, evaluate:</p> $-2\frac{1}{2}x + \frac{5}{6}$	<p>If <math>x = 0</math>, evaluate:</p> $-2(3x + 8)$

# WRITING EXPRESSIONS

Write an expression for each situation.

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

# WRITING INEQUALITIES

Write an inequality to represent each situation.

<p>A number is at least -43.</p> <p><i>Example</i></p> <p><math>x \geq -43</math></p>	<p>Twice a number is no more than 14.</p>	<p>Half a number is more than 20.</p>
<p>You can pay no more than \$20 for groceries.</p>	<p>Emily has already invited 6 friends to her party. She wants to invite at least 20 people altogether.</p>	<p>The temperature is at most 20° outside.</p>
<p>7 is greater than a number.</p>	<p>A number is less than or equal to -15.</p>	<p>-8 is more than triple a number.</p>
<p>At least 40 students need to return their permission slips in order for the field trip to take place.</p>	<p>A soccer team raised more than \$4,250 for charity.</p>	<p>Tim earns at most \$9 an hour at his job.</p>



# MEASURES OF CENTRAL TENDENCY

Show all work.

Example Ages of children in a camp : 5, 6, 8, 4, 6, 7, 8, 9, 12, 8, 10

Find the mean of the ages.

5  
6  
8  
4  
6  
7  
8  
9  
12  
8  
10  
+  
83

$$\begin{array}{r} 7.54 \\ 11 \overline{) 83.00} \\ \underline{77} \phantom{00} \\ 60 \phantom{00} \\ \underline{55} \phantom{00} \\ 50 \phantom{00} \end{array} \approx 7.5$$

how many numbers there are 50

Find the median age.

Put them in order,  
4, 5, 6, 6, 7, 8, 8, 8, 9, 10, 12

Find the range of the ages.

largest  
- smallest

$$\begin{array}{r} 12 \\ - 4 \\ \hline 8 \end{array}$$

Find the mode of the ages.

mode = most often

there are 3 eights.

8

Height of seventh graders (inches) : 48, 60, 62, 55, 49, 52, 60, 58

Find the median height.

Find the range of the heights.

Find the mode of the heights.

Find the mean height.

