

# 7<sup>TH</sup> Grade Math EXIT TEST – Part 2

## WORD PROBLEMS

### Subtraction Word Problems

1. A museum had 710 paintings. After they got rid of some, they had 488 left. How many paintings did they get rid of?  $\underline{\quad} - \underline{\quad} = \underline{\quad}$

2. A store had 800 sodas. After a sale they had 365 left. How many did they sell?

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

### Addition Word Problems

1. Oliver bought some cupcakes for a party. During the party 900 were eaten. Now he has 175. How many cupcakes did Oliver get for the party?  $\underline{\quad} + \underline{\quad} = \underline{\quad}$

2. At a bus stop 108 people got off the bus. Now there were 15 people on the bus. How many people were on the bus before?  $\underline{\quad} + \underline{\quad} = \underline{\quad}$

### Multiplication Word Problems

1. There are 8 birds perched on the branches of a tree. How many feet are there on the branches?  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

2. There are 9 butterflies in a cage. Each butterfly has 6 **black** dots and 5 **yellow** dots. How many **black** dots are there in all?  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

### Division Word Problems

1. Mia had 40 pencils. She divided them into groups of 4. How many groups did she put them into? What division fact helped you know this?  $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

2. The Pancake Restaurant served 32 pancakes. If 8 customers ate an equal number of pancakes, how many did each person eat?  $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

### Word Problems Using Percentages: (Must include dollar signs and other measurements)

1. Decrease \$500 by 30%  $\underline{\quad}$

2. Increase 4 km by 28%  $\underline{\quad}$

3. Simon bought a radio for \$420 and sold it for a 12% profit.  
How much did he sell it for?  $\underline{\quad}$

# EXPRESSION & EQUATIONS

## One Step Equations

**One Step Addition Example**  
The Opposite of Addition is Subtraction

$$y + 14 = 20$$

$$-14 \quad -14$$

$$y \quad = 6 \checkmark$$

The value which makes the equation true is 6.

**ONE STEP SUBTRACTION EXAMPLE**  
The Opposite of Subtraction is Addition

$$x - 120 = 80$$

$$+120 \quad +120$$

$$x \quad = 200 \checkmark$$

The value which makes the equation true is 200.

**Multiplication Example**  
The Opposite of Multiplication is Division

$$3n = 12$$

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

$$n = 4 \checkmark$$

3/3 cancels down to become 1/1 = 1  
n is simply "n"

The value which makes the equation true is 4.

**One Step Division Example**  
The Opposite of Division is Multiplication

$$\frac{k}{2} = 16$$

$$\frac{k}{2} \times \frac{2}{2} = 16 \times 2$$

$$k = 32 \checkmark$$

k is divided by 2, so we need to multiply both sides by 2  
2/2 cancels down to become 1/1 = 1  
k is simply "k"

The value which makes the equation true is 32.

1.  $a + 4 = 10$   $a = \boxed{\quad}$
2.  $f - 7 = 13$   $f = \boxed{\quad}$
3.  $5j = 25$   $j = \boxed{\quad}$
4.  $\frac{p}{2} = 4$   $p = \boxed{\quad}$

## Simplifying Addition & Subtraction Expressions

1.  $10k - 6k = \underline{\quad}$
2.  $7b - 3b = \underline{\quad}$
3.  $5c + 4c = \underline{\quad}$
4.  $9f + 2f = \underline{\quad}$

## Simplifying Multiplication & Division Expressions

1.  $2x + 4$  Let  $x = 8$   $\underline{\quad}$

2.  $7n + 2r - 9$  Let  $n = 3$  and  $r = -3$   $\underline{\quad}$

## Multi-Step Equations

**distribute** - clear parentheses

**combine like terms** - either side of the equation should only have "unlike" terms

**isolate the variable term** - add or subtract the constant term

$$\begin{array}{r}
 11x + 4 = 48 \\
 -4 \quad -4 \\
 \hline
 11x = 44 \\
 \frac{11x}{11} = \frac{44}{11} \\
 x = 4
 \end{array}
 \quad
 \begin{array}{r}
 11(4) + 4 = 48 \\
 44 + 4 = 48 \\
 48 = 48 \checkmark
 \end{array}$$

1.  $5g + 2 - g = 22$   
 $5g - 1g = \underline{\quad} g$   
 $\underline{\quad} g + 2 = 22$   
 $4 \times \underline{\quad} = 20$   
 $\underline{\quad} + 2 = 22$   
 $g = \underline{\quad}$
2.  $6y + 4 - 3y = 13$   
 $6y - 3y = \underline{\quad} y$   
 $3y + 4 = 13$   
 $3 \times \underline{\quad} = \underline{\quad}$   
 $9 + \underline{\quad} = 13$   
 $y = \underline{\quad}$

## Inverse Operations

since  $1 + 3 = 4$   
then  $4 - 1 = \boxed{\phantom{00}}$

since  $9 + 2 = 11$   
then  $11 - 9 = \boxed{\phantom{00}}$

since  $3 + 5 = 8$   
then  $8 - 3 = \boxed{\phantom{00}}$

since  $2 + 3 = 5$   
then  $5 - 2 = \boxed{\phantom{00}}$

since  $7 + 7 = 14$   
then  $14 - 7 = \boxed{\phantom{00}}$

since  $3 + 9 = 12$   
then  $12 - 3 = \boxed{\phantom{00}}$

## **GRAPHING & LINEAR EQUATIONS**

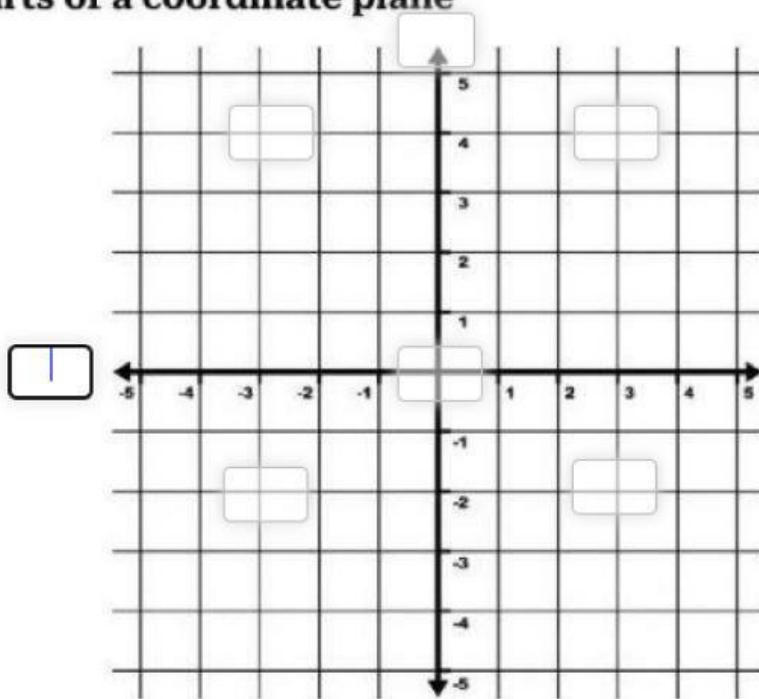
### Cartesian Coordinate System (Coordinate Plane)

**Hint: Label each section with the correct X, Y axis, or the number I, II, III, IV**

### **Parts of a coordinate plane**

Label the:

1. X-axis
2. Y-axis
3. Origin
4. Quadrant I
5. Quadrant II
6. Quadrant III
7. Quadrant IV

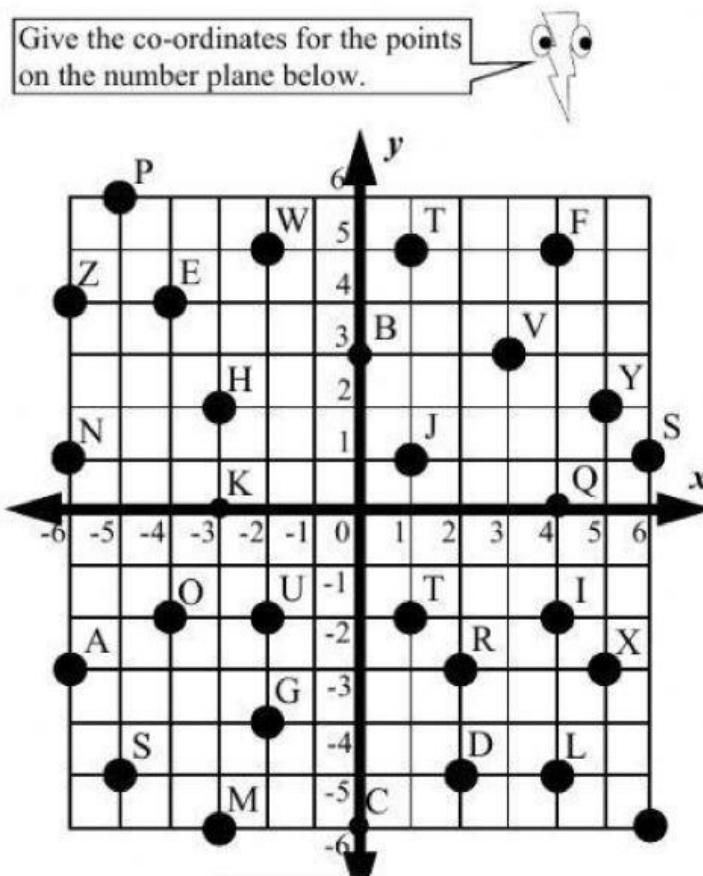


## Plotting Points

**Hint:** Axis **X** is the 1<sup>st</sup> coordinate and Axis **Y** is the 2<sup>nd</sup> coordinate.

Answers must be written in this format: (2, -4) or (1, 5)

Give the co-ordinates for the points on the number plane below.



1 Point A

2 Point B

3 Point C

4 Point D

5 Point E

6 Point F

## Linear Equations

1.  $X + 5 = 12$

$$X = \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$$

$$X = \underline{\hspace{2cm}}$$

2.  $Y - 3 = 15$

$$Y = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$Y = \underline{\hspace{2cm}}$$

3.  $6 + H = 9$

$$H = \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$$

$$H = \underline{\hspace{2cm}}$$

## LINES AND TRIANGLES

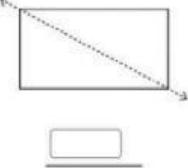
### Lines of Symmetry

Is the dotted line on each shape a line of symmetry? Write yes or no.

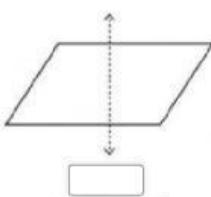
1)



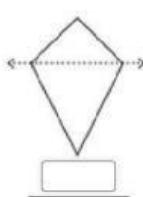
2)



3)



4)



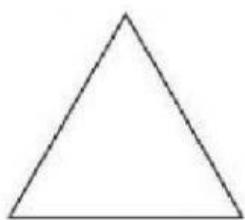
## Rotational Symmetry

Find the order of rotational symmetry in the following shapes:

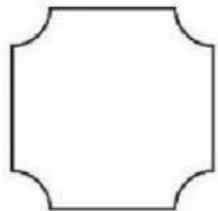
1.



2.



3.



- a) 4
- b) 5
- c) 2
- d) 3

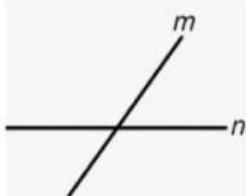
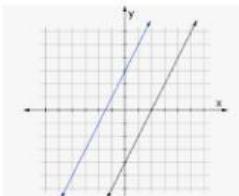
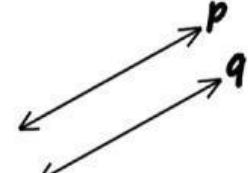
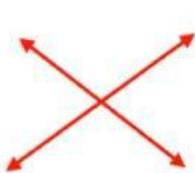
- a) 1
- b) 4
- c) 3
- d) 2

- a) 3
- b) 2
- c) 5
- d) 4

## Parallel Lines

Write Yes if the diagrams below show parallel lines or No if they do not

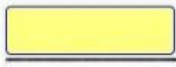
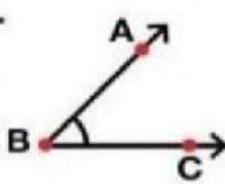
- Parallel lines do not meet.
- The distance between parallel lines is always the same.



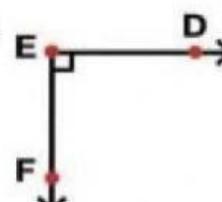
## Types of Angles

Label each angle as acute, obtuse, or right.

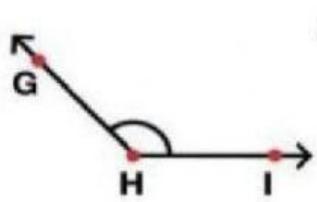
1.



2.



3.



4.

