Welcome to Math 7 Honors!

This summer packet is for students enrolled in Math 7 Honors at Thoreau Middle School for Fall 2021. This packet contains concepts that were taught in Math 6/Math 6 AAP. It is important that you know and understand these concepts, as we will build on them in Math 7 Honors.

Please spend some time this summer keeping these skills and concepts fresh in your mind. The packet will not be turned in for a grade, however it is great practice so be sure to **show all of your work.**

Use all resources available to you to help complete the packet such as family members, friends, the internet, and of course… a calculator!

In Math 7 Honors, we will use a hand-held calculator and/or the online Desmos Scientific calculator. You can access the Desmos calculator here: https://www.desmos.com/scientific.

Have a great summer, we cannot wait to meet you in August!

From,

The Math 7 Honors Teachers

Section 1 - Integer Computation

For this section, try to complete the problems without using a calculator, then check your answers with a calculator.

Directions: Simplify each expression.

1. -25 – (-76) =
2. -88 + -19 =
3. -7 • -9 =
4. $\frac{-24}{6}$ =
5. $\frac{-81}{-9}$=
6. -6 • 50 =

Section 2 - Order of Operations

For this section, try to complete the problems without using a calculator, then check your answers with a calculator.

Directions: Simplify each expression.

1. $4[-3 \bullet (8-12)] - 2^2$
2. $|-9-3| + (8-4)^2$
3. $\frac{27 \div 3 - 11}{3^2 - 13}$
4. If a = 4, b = 9, and c = 2

$$\sqrt{ab} - c^2$$

Section 3 - Proportional Reasoning

Directions: Solve each word problem. Use a calculator as needed.

1. On a map, Lake Hood measures 5 cm in length. The scale of the map says that 2 cm is equal to 3 miles. What is the actual length of Lake Hood?

2. A girl $5\frac{1}{2}$ feet tall casts a shadow $8\frac{1}{4}$ feet long. She stands next to a statue that has an 18 foot long shadow. How tall is the statue?

3. Which iPod Nano is the better deal per gigabyte?

   8 gigabytes for $149. 16 gigabytes for $179.

Section 4 - Percent Computation

Directions: Solve each problem. Use a calculator as needed.

1. What is 20% of 120?

2. What percent of 130 is 78?

3. The cost of a gallon of milk is $3.99. How much will the milk cost after 6% tax is added to it?

Section 5 - Equations

Solve for the variable. Check your answer by substituting your solution back into the original equation and simplifying.

1. $22 = -3x + 16$ Check: $22 = -3(\quad) + 16$

2. $\frac{x}{6} - 3 = 21$ Check: $\frac{(\quad)}{6} - 3 = 21$

Simplify by using the Distributive Property.

3. $(8 + t)\,7$

4. $-3(k - 4)$

Write an equation to represent the sentence:

5. The sum of a number and four is nine. _____

Section 6 - Inequalities

A "possible solution" is a number that satisfies the inequality statement. For example, if x > 5, a possible solution is 6 because 6 is greater than 5.

Directions: Solve for the variable. For numbers 1-2, check your answer by substituting a possible solution back into the original inequality and simplifying.

1. $-\frac{1}{2}x + 3 \geq 6$

2. $x - (-47) > 89$

Check:

Check:

3. Which answer choices below are solutions to $\frac{x}{5} + 2 >- 11$?

   a. -66
   b. -47
   c. -45
   d. -37

4. Find the solution to the following inequality: "The difference of a number and seven is less than two."

   a. x < 9
   b. x > 9
   c. x < -5
   d. x > -5

Section 7 - Graphing on the Coordinate Plane

Directions: Use the coordinate plane given to graph each of the points below. Label your points on the graph to correspond with the letter next to the ordered pair.

A (3, 5)

B (-4, -6)

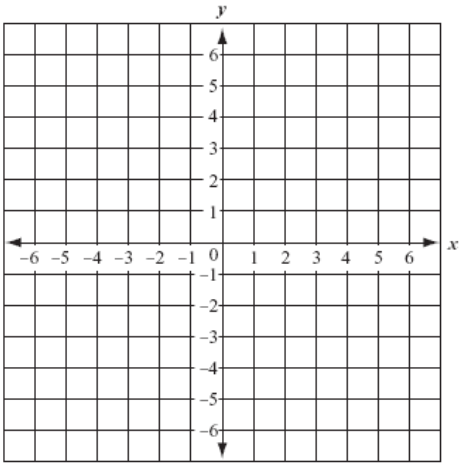
C (0, -4)

D (-5, 2)

E (6, 0)

F (2, -3)

G (0, 0)



Section 8 - Functions

1. Identify the slope (m) or y-intercept (b) from the table.

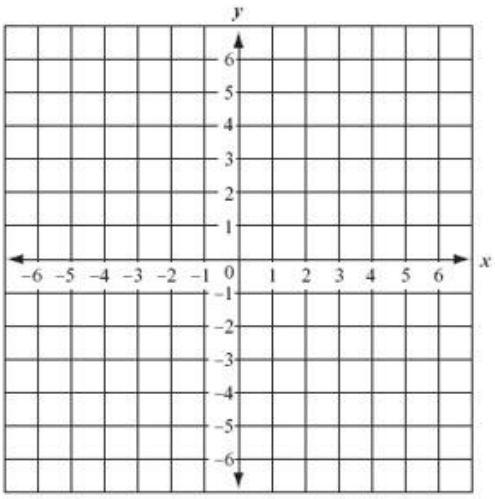
x	y
-2	-12
-1	-6
0	0
1	6

Slope (m): _____

Y-intercept (b): _____

2. Use the rule to complete the table (showing your work) and graph the line.

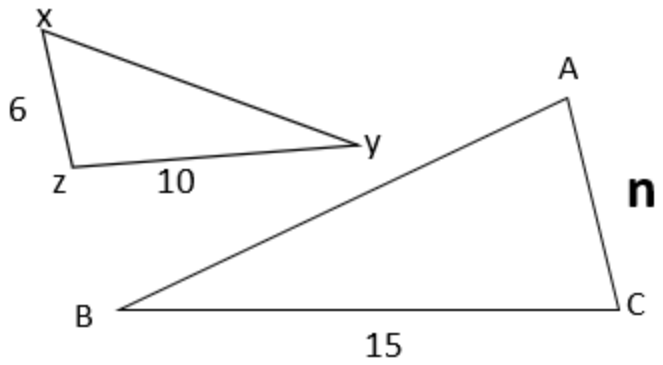
x	$y = x - 3$	y	(x, y)
–2			
–1			
0			
1			
2			



Section 9 - Geometry

Directions: The figures in each question are similar. Set up a proportion using corresponding sides, cross-multiply, and solve to find the missing side length.

1. ⊿ABC ~ ⊿XYZ. Find the value of AC.

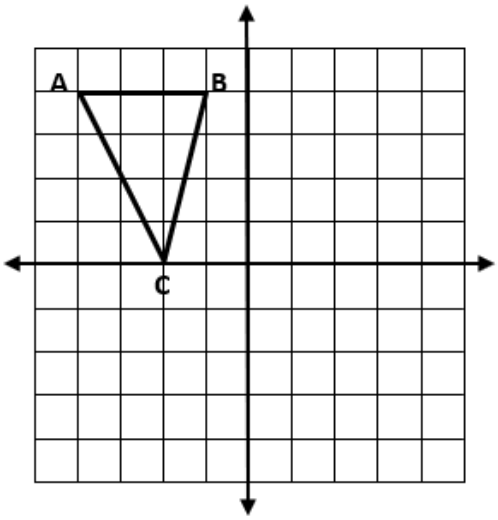


Side lengths proportion:

— = —

Solution: **n =** _____

2. Reflect the triangle over the x-axis. Plot the image and record the coordinates for each point.



A _____ A' _____

B _____ B' _____

C _____ C' _____

3. Match each quadrilateral to its *best* description:

a. All angles are 90°	Trapezoid
b. All angles and sides are equal	Square
c. Only one pair of parallel sides	Rectangle