Mark Twain Middle School

Summer 2019

Name:_____

All rising **Math 7 Honors students** must complete this packet over the summer. There will be **help sessions** offered to students who need assistance completing this assignment. Please check the Mark Twain Middle School website for information regarding the dates and times for this summer's sessions.

All students are expected to complete this assignment with little help. If there is a topic in this packet you do not understand you need to master it before school starts to ensure you will be successful in Math 7 Honors.

This assignment is due for

ALL Mark Twain Middle School

Math 7 Honors students on the first day of school:

August 26th, 2019

Students will be assessed during the first week of school on the topics in this packet

Topic 1: Integer Operations
This topic should be completed WITHOUT a calculator.

Integer Addition Practice:

1) (-2) + (-9) = _____

2) -5 +13 = _____

3) 8 + -2 = _____

4) -12 + 7 = _____

5) (-4) + (-3) =_____

Integer Subtraction Practice:

6) 5 – 9 = _____

7) -2 – 8 = _____

8) (-15) – (-3) = _____

9) -12 - 5 = _____

10) 4 - 6 = _____

Integer Multiplication and Division Practice:

11) -7(6) = _____

12) -3 • - 4 = _____

13) 5 x (− 8) = _____

14) -35 ÷ 7 = _____

15) -32 ÷ - 4 = _____

16) $\frac{-18}{6}$ = _____

Ordering Integers and Decimals Practice:

17. Order from *least to greatest*:

-5, 2, 10, -3, -1, 7   _____

2.5, -3, 2, -3.5, 1 -2.5   _____

18. Order from *greatest to least*:

8, 4, -6, 11, -5, 2   _____

-17, 20, -4.8, 0, -4.1, -1   _____

Topic 2: Converting and Ordering Fractions, Decimals, Percents, and Scientific Notation

*This assignment should be completed WITHOUT a calculator.

SHOW ALL WORK!

Complete each conversion. Show all work. You may NOT use a calculator.

Write each percent as a decimal.

1. 12%

2. 5%

3. 1.7%

4. 72%

_____   _____   _____   _____

Write each decimal as a percent.

5. 0.3

6. 0.21

7. 0.09

8. 3.225

_____   _____   _____   _____

Express each fraction as a decimal. Round to the nearest tenth, if necessary.

9. $\frac{3}{5}$

10. $\frac{9}{32}$

11. $\frac{3}{8}$

12. $\frac{11}{4}$

_____   _____   _____   _____

Express each number in standard form:

13. 6.21×10^6 _____

14. 1.0×10^1 _____

15. 8.75×10^5 _____

16. 8.49×10^{-2} _____

17. 7.1×10^{-6} _____

18. 1.0×10^{-3} _____

Order the following from *least to greatest*: (Hint: Convert them to decimals, and then line up decimal points to order them)

19. $\frac{2}{3}$, 70%, 0.65, $\frac{3}{5}$

   _____

20. $\frac{1}{3}$, 31%, 0.35, $\frac{3}{10}$

   _____

Topic 3: Order of Operations

Simplify each expression using the order of operations

1. -1(-3) • (-3+2)	2. $\dfrac{-3(2-4)}{-3}$	3. $-20 \div 4 + (-6)(7)$
4. $-8 \bullet -6 - (2-9)^2$	5. $\dfrac{13+9+3(2)}{11-\sqrt{16}}$	6. $[(4+16) \div 2] - \sqrt{196}$

Topic 4: Evaluating Expressions

Evaluate each expression by substituting in the appropriate numbers for the variable and using the order of operations

1. Evaluate $5m-2$ when $m=3$	2. Evaluate $4(c+7)-8$ for when $c=13$
3. m^2+2m-3 for when $m=4$	4. Evaluate $-\frac{3}{4}x - 5x$ when $x = 20$

Topic 5: Graphing Ordered Pairs

Plot the following points on the coordinate plane and label with the appropriate letter. Make sure your points are bold.
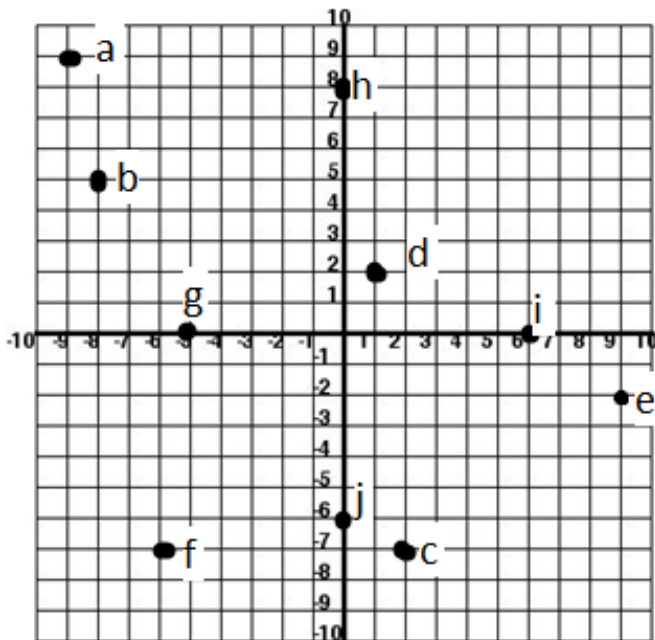
Give the coordinates of each point:

A: _____

B: _____

C: _____

D: _____

E: _____

F: _____

G: _____

Plot and label the following points:

K: (0, -2)

L: (9,0)

M: (-2, -1)

N: (8, -4)

O: (-9, 1)

Topic 6: One and Two- Step Equations

It is expected and *essential* that you understand how to solve 1 and 2-step equations algebraically when you enter Math 7 Honors. In Math 7 HN, we focus on multi-step equations and equations with variables on both sides.

Examples:

Solve using addition and subtraction.

$r + 16 = -7$ Get the variable by itself. Right now 16 is being added to it.

$\underline{-16 \quad -16}$ Undo the addition by subtracting 16 from both sides.

$r = -23$ Answer.

Solve using multiplication and division.

$-5t = 60$ Get the variable by itself. Right now -5 is being multiplied to it.

$\dfrac{-5t}{-5} = \dfrac{60}{5}$ Undo the multiplication by dividing both sides by -5.

$t = -12$ Answer.

Solve for x, showing each step like above.

1) $x + 8 = -12$

2) $x - (-5) = 17$

3) $15 = -2x$

4) $\dfrac{x}{5} = -4.5$

5) $7 + w = -10$

6) $-3c = -24$

7) $\dfrac{y}{8} = -5$

8) $3.5 = g - 6$

2-Step Equations

Solving Two-Step Equations

1. Add or subtract to isolate the variable term.
2. Multiply or divide to solve for the variable.
3. Check your solutions.

Example:

$$3x + 5 = -16$$

$$\underline{-5 \quad -5} \quad \text{Subtract}$$

$$3x = -21$$

$$\frac{3x}{3} = \frac{-21}{3} \quad \text{Divide}$$

$$x = -7$$

$$3(-7) + 5 = -16 \quad \text{Check}$$

Your Turn: Solve each equation, showing each step. Check your solution.

1) $80 = 10d - 20$

2) $59 = 7x + 10$

3) $5p - 8 = 22$

4) $15 + 2x = 75$

5) $\frac{z}{4} - 6 = 18$

6) $\frac{m}{5} + 8 = -12$

7) $\frac{w}{-3} + 5 = 13$

8) $-6 - 3x = 12$

Topic 7: One-Step Inequalities

It is expected and *essential* that you understand how to solve and graph a one-step inequality.
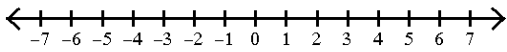
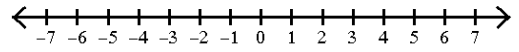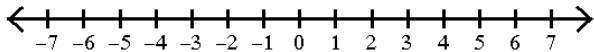**Graph the inequalities:**

1) x < -4

$$\longleftarrow\!\!+\!\!\underset{-7}{+}\!\!+\!\!\underset{-6}{+}\!\!+\!\!\underset{-5}{+}\!\!+\!\!\underset{-4}{+}\!\!+\!\!\underset{-3}{+}\!\!+\!\!\underset{-2}{+}\!\!+\!\!\underset{-1}{+}\!\!+\!\!\underset{0}{+}\!\!+\!\!\underset{1}{+}\!\!+\!\!\underset{2}{+}\!\!+\!\!\underset{3}{+}\!\!+\!\!\underset{4}{+}\!\!+\!\!\underset{5}{+}\!\!+\!\!\underset{6}{+}\!\!+\!\!\underset{7}{+}\!\!\longrightarrow$$
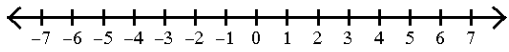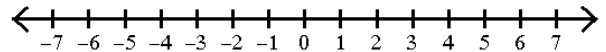
2) y ≥ 3
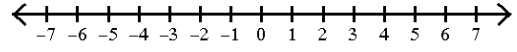
3) w ≥ -1

4) -4 > x

Solve each inequality and graph the solution. Show all work.
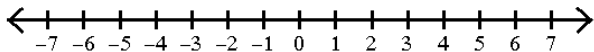
5) $a + 8 \geq 6$

6) $-12 < -6 + y$
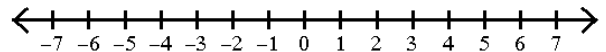
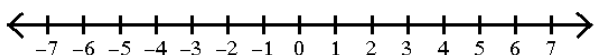7) $-7h > -35$

8) $-1 \leq \dfrac{w}{4}$

9) $-5h > 30$

10) $\dfrac{w}{2} \leq -3$