

Name \_\_\_\_\_

Date \_\_\_\_\_

Mr. Tallman

Math 7

**Review for Test 1 – Integers and Number Properties**

| <b>Rules for Adding, Subtracting, Multiplying and Dividing Integers</b> |   |  |
|---|---|--|
| Rule for...   | Rule  | Example(s)   |
| Adding Integers with the same sign:                                     | Add the numbers, keep the common sign.  | $6 + 3 = 9$<br>$-5 + (-3) = -8$                                      |
| Adding Integers with different signs:                                   | Subtract the numbers, keep the sign of the number with the higher absolute value.   | $-5 + 3 = -2$<br>$-2 + 4 = 2$<br>$6 + (-1) = 5$<br>$10 + (-12) = -2$ |
| Subtracting Integers:   | Keep the first number, change the subtraction to addition, and change the sign of the second number. Then follow addition rules.<br><b>**Think Keep, Change, Change**</b> | $-9 - 12$<br>$-9 + (-12) = -21$<br>$7 - (-10)$<br>$7 + 10 = 17$      |
| Multiplying and Dividing Integers (same sign):                          | Find the product/quotient, then make the product/quotient positive.   | $4 \cdot 8 = 32$<br>$\frac{-16}{-8} = 3$                             |
| Multiplying and Dividing Integers (different signs):                    | Find the product/quotient, then make the product/quotient negative.   | $8(-6) = -48$<br>$\frac{28}{-4} = -7$                                |

Order of operations (PEMDAS) tells us the order in which we have to evaluate expressions.

Parenthesis

**\*\*REMEMBER: Absolute Value acts like Parenthesis\*\***

Exponents

Multiplication

Division

Addition

Subtraction

**For questions 1-6, use the word bank to state which property is being illustrated.**

| Word Bank   |                         |                       |   |                                  |  |
|---|-------------------------|-----------------------|---|----------------------------------|--|
| Additive Inverse  | Multiplicative Identity | Distributive Property | Commutative Property of Multiplication                                  | Commutative Property of Addition | Associative Property of Multiplication |
| 1) $7 \cdot (8 \cdot 1) = (7 \cdot 8) \cdot 1$<br>Associative prop. of multiplication |                         |                       | 2) $\frac{1}{2} \cdot 1 = \frac{1}{2}$<br>Multiplicative Identity       |                                  |  |
| 3) $-13 + 13 = 0$<br>Additive Inverse   |                         |                       | 4) $8(7 + 6) = 8(7) + 8(6)$<br>Distributive Property                    |                                  |  |
| 5) $12 \cdot 4 = 4 \cdot 12$<br>Commutative prop. of multiplication                   |                         |                       | 6) $9 + \frac{1}{2} = \frac{1}{2} + 9$<br>Commutative prop. of addition |                                  |  |

7) A football team gains 6 yards on the first play, loses 3 yards on the second play, loses 1 yard on the third play and gains 10 yards on the fourth play. What is the team's overall gain or loss for all four plays?

$$6 + (-3) + (-1) + 10$$

$$\checkmark$$

$$3 + (-1) + 10$$

$$\checkmark$$

$$2 + 10 = +12 \text{ yards}$$

or 12 yard gain

8) Which of the following is NOT true about the equation  $= 2,156 + (-1,843)$ ?

- ~~A) The sum will be a negative number.~~    ~~B) The sum will be 2,156~~     C) The sum will be a positive number    ~~D) The equation is the same as  $x = -1,843 + 2,156$~~

9) The temperature in Merrick, NY on Friday was  $82^\circ$  during the day. The temperature changed by  $-21^\circ$  overnight. What was the temperature Saturday morning?

$$82 + (-21) = 61^\circ \text{F}$$

10) Jeanie was solving the equation below. Describe the error that Jeanie made.

Jeanie should have added 7 rather than subtract 7.

|   |
|---|
| $  \begin{array}{r}  x - 7 = 12 \\  \underline{-7 \quad -7} \\  x = 5  \end{array}  $ |
|---|

**Use integer rules to answer the following problems:**

11)  $-24 \div (-2) = \underline{12}$

12)  $-3(-6)(-2) = \underline{-36}$   
 $\checkmark$   
 $18(-2)$

13)  $-20 - 5 = \underline{-25}$   
 $-20 + (-5)$

14)  $13 + (-8) = \underline{5}$

**Evaluate the following expressions when  $x = -5$ ,  $y = 3$  and  $z = -6$**

|   |  |   |
|---|--|---|
| <p>15) <math>z + x</math><br/> <math>-6 + (-5)</math><br/> <math>\textcircled{-11}</math></p> | <p>16) <math>x - y \cdot z \div y</math><br/> <math>-5 - 3 \cdot (-6) \div 3</math><br/> <math>-5 - (-18) \div 3</math><br/> <math>-5 - (-6)</math><br/> <math>-5 + 6 = \textcircled{1}</math></p> | <p>17) <math> y + z  - x \cdot y</math><br/> <math> 3 + (-6)  - (-5) \cdot 3</math><br/> <math>\checkmark</math><br/> <math> -3  - (-5) \cdot 3</math><br/> <math>3 - (-5 \cdot 3)</math><br/> <math>3 - (-15)</math><br/> <math>3 + 15 = \textcircled{18}</math></p> |
|---|--|---|

**Solve and Check.**

|   |  |  |  |
|---|--|--|--|
| <p>18) <del><math>\frac{x}{3} = 7 - 3</math></del><br/> <math>x = -21</math></p> <p>Check:<br/> <math>\frac{x}{3} = 7</math>    <math>\frac{-21}{3} = 7</math><br/> <math>-\frac{21}{3} = 7</math><br/> <math>7 = 7 \checkmark</math></p> | <p>19) <math>p - 6 = -12</math><br/> <del><math>+6</math></del>    <del><math>+6</math></del><br/> <math>p = -6</math></p> <p>Check:<br/> <math>p - 6 = -12</math><br/> <math>-6 - 6 = -12</math><br/> <math>-6 + (-6) = -12</math><br/> <math>-12 = -12 \checkmark</math></p> | <p>20) <math>-42 = -7h</math><br/> <del><math>= 7</math></del>    <del><math>= 7</math></del><br/> <math>h = 6</math></p> <p>Check:<br/> <math>-42 = -7h</math><br/> <math>-42 = -7(6)</math><br/> <math>-42 = -42 \checkmark</math></p> | <p>21) <math>-5 + x = -10</math><br/> <del><math>+5</math></del>    <del><math>+5</math></del><br/> <math>x = -5</math></p> <p>Check: <math>-5 + x = -10</math><br/> <math>-5 + (-5) = -10</math><br/> <math>-10 = -10 \checkmark</math></p> |
|---|--|--|--|

**Complete each statement using  $<$ ,  $>$ , or  $=$ .**

|  |   |  |
|--|---|--|
| <p>22) <math> -7  \underline{&gt;}  -2 </math><br/> <math>\downarrow</math>    <math>\downarrow</math><br/> <math>7</math>    <math>2</math></p> | <p>23) <math>0 \underline{&lt;}  -9 </math><br/> <math>\downarrow</math>    <math>\downarrow</math><br/> <math>9</math></p> | <p>24) <math>12 \underline{=}  -12 </math><br/> <math>\downarrow</math><br/> <math>12</math></p> |
|--|---|--|

