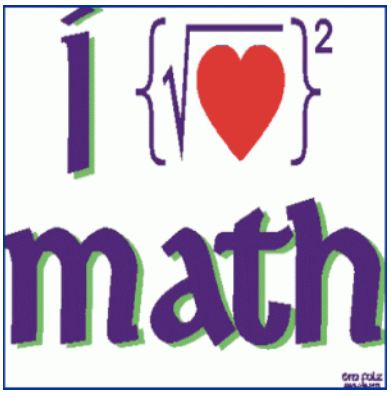
Name_____ 7th Grade Teacher:_____

Summer 2014

Dear 8th grade Math Student,

Enclosed you will find the Summer Math Packet. It consists of skills taught in 7th grade. It is ***DUE THE FIRST DAY OF SCHOOL*** and will be collected and reviewed by your teacher. Please DO NOT use a calculator on the pages stated on the top of the page.

We are looking forward to a great school year.



TOPICS

- ABSOLUTE VALUE- distance from zero
  - Example: |5|= 5 and |-4|= 4
- ADDING INTEGERS- add integers with the same sign and subtract integers with different signs
  - Example: -2 + -4 = -6 and 5 + (-2) = 3
- SUBTRACTING INTEGERS- add its opposite
  - Example: 5 – (-3) = 8 and -6 – (-3) = -3
- MULTIPLYING INTEGERS- the product of two integers with different signs is negative and the product of two integers with the same sign is positive.
  - Example: 5(-3) = -15 and (-6)(-4) = 24
- DIVIDING INTEGERS- the quotient of two integers with different signs is negative and the quotient of two integers with the same sign is positive.
  - Example: -14/2 = -7 and -20/-4 = 5
- THE DISTRIBUTIVE PROPERTY- combines multiplication with addition or subtraction
  - Example: 3(x + 2) = 3x + 6 and 4(y – 3) = 4y – 12
- ORDER OF OPERATIONS- Evaluate the expressions inside the parenthesis, multiply and/or divide from left to right, and then add and/or subtract from left to right.
  - Example: 5(6 + 1) – 3*3 = 26
- EVALUATE EXPRESSIONS- replace the variable(s) with known values and follow order of operations.
  - Example: Evaluate when x = 2 and y = 3; 5xy + x = 5(2)(3) + 2 = 32
- ONE STEP EQUATIONS- To get the variable by itself, add, subtract, multiply, or divide the same number from each side of the equation. Check your solution.
  - Example: Solve: x + 5 = 11; subtract 5 on both sides; x = 6
- USING PROPORTIONS- a proportion is a statement of a equality of two or more ratios. To determine if two ratios form a proportion, check their cross products.
  - $\frac{5}{8} = \frac{x}{40}$ cross multiply first, 5(40) = 8x; 200 = 8x; divide by 8; x = 25

ABSOLUTE VALUE- DO NOT USE A CALCULATOR

Simplify.

1. |4| - |-2|
2. |-8| + |-3|
3. |-15| - |6|
4. |-7| * |-11|
5. |12| * |-4|
6. |-36| ÷ |6|
7. |-8| ÷ |-4|
8. |8| * |-6|
9. |7| - |-3|
10. |9| + |2| - |-3|

Challenge*

a. |3x| = 21

b. |x| + 2 = 10

ADDING INTEGERS- DO NOT USE A CALCULATOR

Add

1. -3 + (-2)
2. -6 + 4
3. 2 + (-2)
4. -5 + 3 + 3
5. -2 + (-1) + 6
6. 2 + (-7) + (-1)
7. 9 + (-4) + 3
8. -4x + 7x
9. -10t + 9t
10. 3y + 6y + (-10)y

SUBTRACTING INTEGERS- DO NOT USE A CALCULATOR

Simplify each expression

1. 5 – 11
2. 9 – (-2)
3. 11 – 3
4. -5x – 5x
5. -7y – (-12y)
6. 4z – 15z
7. 15xy – (-6xy)
8. 36c – (-81c)
9. -53va – 32va
10. -35m – (-35m)

****Challenge****

a. 4x – (-3x) + 5y – 4y

b. 25 – 7x + 5

MULTIPLYING INTEGERS-DO NOT USE A CALCULATOR

(* AND () means multiply)

State whether each statement is true or false.

1. The product of two positive integers is positive.
2. The product of one negative and two positive integers is negative.

Multiply

3. -4 *(-15)
4. -8 * 7
5. 2 * (-5)
6. 3 * (-6)
7. (-3)(-9)(2)
8. (2)(-5)(-5)
9. (8)(-2)(1)
10. (-7)(-8)(-3)(0)

DIVIDING INTEGERS-DO NOT USE A CALCULATOR

Divide

1. 12 ÷ (-6)
2. -15 / 3
3. 14 / 2
4. -21 ÷(-7)
5. 30 / (-5)
6. 0 ÷ 6
7. 64 / 8
8. -49 / 7
9. -81 / 9
10. -24 / (-8)

*****Challenge********

a. (5)(3) ÷ (-3)

b. (-4)(-3) / 6

THE DISTRIBUTIVE PROPERTY

Use the distributive property to write expression as an equivalent expression.

1. 3(x + 2)
2. 4(w – 5)
3. -2(c + 7)
4. (p – 10)8
5. -15(4 + n)
6. -12(x – 12)
7. (x + 3)(-3)
8. -11(t – 6)
9. 8(x + 60)
10. –(x +2)

*****Challenge*******

a. –(x – 3) + 6

b. 2(x + 2) + 3x

ORDER OF OPERATIONS-DO NOT USE A CALCULATOR

Evaluate each expression

1. 6 + 3 * 9
2. 14 -6 + 8
3. 10 ÷ 5 * 3
4. 22 / 11 – 6
5. 2(6 + 2) – 4 * 3
6. 2[(13 – 4) + 2(2)]
7. $\frac{(67+13)}{(34-29)}$
8. 8 * 7 ÷ 14 – 1
9. $\frac{4(18)}{2(9)}$
10. 9 + 3 ÷ 3

******Challenge*******

a. -3(4 + 5) ÷ -9

b. 7 – 10 * 2 / 4

EVALUATE EXPRESSIONS

Evaluate each expression if x = 10, y = 5, z = 1

1. x+ y – z
2. $\frac{x}{y}$
3. 2x + 4z
4. xy + z
5. $\frac{6y}{10z}$
6. x(2 + z)
7. x – 2y
8. $\frac{(x+y)}{z}$
9. -2x – 5
10. 5(z – x)

ONE STEP EQUATIONS

Solve each equation and check your solution

1. -3a = 15

2. –t = 5

3. $\frac{h}{7} = 0$

4. $\frac{a}{-2} = -1$

5. X + 5 = 2

6. 11 + w = 10

7. A – 7 = -5

8. -3 + x = -7

9. Y – (-9) = 12

10. 4x = -2

******Challenge**********

3x – 5 = 4

USING PROPORTIONS

Solve each proportion

1. $\frac{5}{8} = \frac{x}{40}$

2. $\frac{6}{3} = \frac{10}{t}$

3. $\frac{x}{5} = \frac{42}{7}$

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

5. $\frac{2}{3} = \frac{0.8}{x}$

Write a proportion that could be used to solve each problem. Then solve the proportion.

6. Victoria can pick 2 rows of beans in 30 minutes. How long will it take her to pick 5 rows if he works at the same rate?

7. A tree casts a **shadow** 30 meters long. A 2.8-meter pole casts a **shadow** 2 meters long. How tall is the tree?