Name _____   Date_____

Pre-Algebra Skills

Answer the following questions to the best of your ability. You may use a calculator and scratch paper. *It is okay if you do not know the answer to everything.*

Simplify the following expressions. [Hint: remember <u>PEMDAS</u>!]

1) $10 - 4/2 =$

2) $4 - 5(3 - 1) =$

3) $5 + 600 \div (15 + 5) =$

4) $3 - 4(2 - 1) =$

5) $(5 + 7) \div (15 + 5) =$

6) $(2 + 4)(2 - 4) =$

7) $(1 - 3)(4 + 0) =$

8) $(-6 + 4)(-6) =$

9) $10x - 9x \div 3 =$

10) $3x - 2(5 - 2x) =$

11) $4x - 2(2 - x) =$

12) $(2x + 4)(10 - 7) =$

Solve for x in the following equations:

1) $x - 5 = 8$

2) $x + 4 = 6 - 1$

3) $x + 4 = 2x$

4) $2x - 6 = 3x$

5) $3x + 3 = 9x$

6) $4x - 2x = \frac{6}{3}$

7) $2x = 4(3 - x)$

8) $x(2 + 4) = 4x + 2$

9) $2(2 + x) = 12$

10) $(7 + x) - 4 = 1$

11) $4(x + 0) = 2(x - 1)$

12) $\frac{10}{x+4} = 2$

Solve the following word problems by creating and solving an equation:

1) Marisol made a total of $57 selling brownies and lemonade. She knows she sold $25 worth of brownies. How much did she make selling lemonade?

2) Dante sold half of his comic books and bought four more. He now has 12. How many did he start with?

3) Cheyenne had $207. She went to the bookstore and bought 9 books. She has $18 left over. What was the cost of each book, assuming they all cost the same?

4) Michaela went to the movies and bought popcorn and soda. Her total was $14.50. If the soda was $5, how much was the popcorn?

Simplify each expression. Use the distributive property and combine like terms where necessary.

1) $4(x + 2)$

4) $5(6r - 9)$

2) $2d + 6 + 9d - 10$

5) $-6y - 2y^2 - 3y$

3) $5(h + 4) + 8(h - 2)$

6) $-6(j^2 - 2j) + 10j^2$

Evaluate each expression.

1) 2m2 – 5m + 10   If m = -2   2) xy + 12   If x = 5, y = -2

Write an algebraic expression for each verbal expression.

1) 23 less than q   2) The quotient of h and m

Evaluate.

1) |-56| 2) 8 – (-45)   3) -15 + (-36)
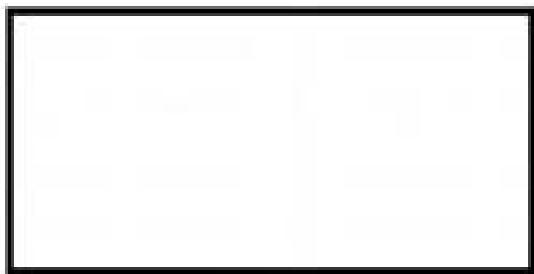
4) (-3)(-10)   5) (8)(3)(-5/12)   6) 5^3

7) $\{8 / [(4)(2)]\} / \{10^2 / [(2)(25)]\}$ 26) 4 - [18 / (2+1)]

Solve.

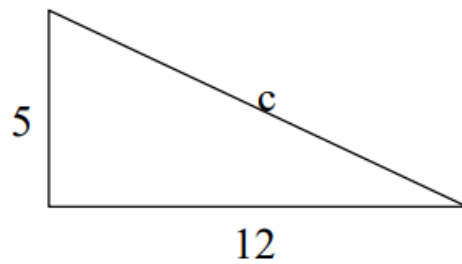1) Write an expression for the perimeter and area of the following:

7

P =

3x

A =

2) If the 2pm temperature is only 12° F and by 9pm the temperature has fallen 17° F , what is the current temperature at 9pm?

3) Find the length of one side of the square if the area is 250in²

4) Use the Pythagorean Theorem to find the missing side:

5   12   c

5) Parker has a square patio that is 680 square feet. What is the length of one side?