Name _____ Geometry Summer Assignment

At the beginning of the school year, an assessment of your knowledge will given in class during the first week of classes. This assessment will be based on the topics from your summer packet. Below are topics students entering into Geometry are expected to know and have a foundational understanding:

- Solving Quadratic Equations-Algebra
- Completing the Square - Algebra
- Factoring-Algebra
- Solving Multi-Step equations 6th grade, 7th grade, 8th grade, Algebra
- Solving inequalities -7th grade, Algebra
- Graphing lines 8th grade, Algebra
- Slope intercept form 8th grade, Algebra
- Functions 8th grade, Algebra
- Transformations 8th grade, Algebra
- Pythagorean theorem -8th grade
- Basic shapes and properties solving word problems 7th grade
- Basic Triangle angles and measurements-7th grade
- Surface Area and Volume 6th and7th grade
- Conversions of Unit Measure 6th and 7th grade
- Area and perimeter word problems 6th grade
- Similar Figures 8th grade
- Know your multiplication tables, grade school
- Know your operations with Integers (sign numbers) -6th grade 7th grade
- Know how to solve ratios and proportions -6th grade 7th grade, Algebra
- Sets of real numbers 6th grade
- Simplifying radicals 8th grade, Algebra
- Understanding percent word problem 7th grade
- Understanding basic word problems 6th grade 7th grade
- Rationals versus irrational 6th grade
- Basic statistics(mean median mode) 6th grade, Algebra
- Probability 7th grade
- Operations with Fractions- 6th grade
- Exponents -8th grade

To aide in the recollection of topics, utilize Youtube, Khan Academy, and various Math websites.

Name:_____

This assignment is due on the 1st day of classes in September. The questions are representative of skills you have learned this year that you will need in order to be successful in Geometry. Read and follow all directions.

PART I: Record the correct choice on the space provided. Show your work for each multiple choice problem on the back of this page

_____1. What is the value of the expression $2x^2 - 3xy - 2y^2$ if $x = 2$ & $y = -3$?

1. −20 2. −2 3. 8 4. 16

_____2. What is the value of x in the equation $13x - 2(x + 4) = 8x + 1$?

1. 1 2. 2 3. 3 4. 4

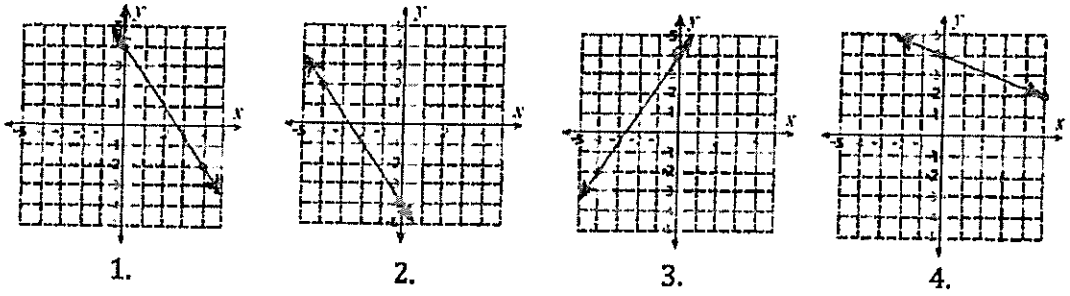
_____3. What are the zeros of the function $f(x) = 3x^2 - 3x - 6$?

1. $\{-1, -2\}$ 2. $\{1, -2\}$ 3. $\{1,2\}$ 4. $\{-1,2\}$

_____4. What is the slope of the line containing the points $(-3,7)$ & $(3,3)$?

1. $\frac{2}{3}$ 2. $-\frac{2}{3}$ 3. $\frac{3}{2}$ 4. $-\frac{3}{2}$

_____5. Which of the following graphs represents the equation $2x + 5y = 20$?



1. 2. 3. 4.

_____6. What is $\sqrt{72}$ in simplest radical form?

1. $2\sqrt{18}$ 2. $3\sqrt{8}$ 3. $6\sqrt{2}$ 4. $9\sqrt{8}$

_____7. Which verbal expression is represented by $2(x + 4)$?

1. twice the sum of a number and four
2. the sum of two times a number and four
3. two times the difference of a number and four
4. twice the product of a number and four

_____8. Which expression is equivalent to $3(x^2 - 1) - (x^2 - 7x + 10)$?

1. $2x^2 - 7x + 7$
2. $2x^2 + 7x - 13$
3. $2x^2 - 7x + 9$
4. $2x^2 + 7x - 11$

_____9. The expression $(-2a^2b^3)(4ab^5)(6a^3b^2)$ is equivalent to

1. $8a^6b^{30}$ 2. $48a^5b^{10}$ 3. $-48a^6b^{10}$ 4. $-48a^5b^{10}$

_____10. The expression $(6x^3y^6)^2$ is equivalent to

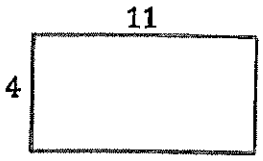
1. $36x^5y^8$ 2. $36x^6y^{12}$ 3. $12x^6y^{12}$ 4. $6x^6y^{12}$

All work for each multiple choice question must be shown in the corresponding box.

1.	2.
3.	4.
5.	6.
7.	8.
9.	10.

PART II: Show all work for each question.

11. Find the perimeter and area of the following rectangle.



12. The length of a rectangle is 3 cm less than the width. The area is 54 cm^2. Find the length and the width of the rectangle.

13. Solve the following literal equation for *r*.

$V = \pi r^2 h$

14. Put the following polynomial in standard form and give its degree.

$-5x + 2x^3 + x^2 - 3(x^2 + 5x) - 4x^3$

15. Solve the following fractional equation.

$\frac{7x}{10} - \frac{x}{5} = \frac{3}{2}$

16. Factor & solve the following quadratic equation.

$3x^2 - 11x - 4 = 0$

17. If the perimeter of a triangle is 45 cm and the ratio of the 3 sides is 2 : 3 : 4, find the length of all 3 sides.

18. Write the equation of the line, in slope intercept form, containing the points (2, –1) and (–2, 7).

19. Solve the following system of linear equations.

$x + 3y = 11$
$3x - y = 3$

20. Multiply the following sets of binomial factors.

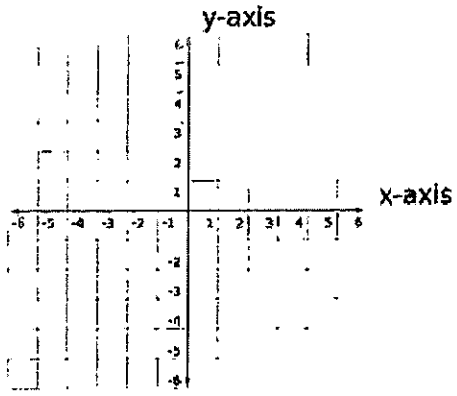
a) $(x + 3)(x - 9)$

b) $(x - 6)(x + 6)$

c) $(x + 7)(x + 7)$

d) $(3x + 2)(4x - 5)$

21. Solve the following system of linear equations. Label your lines and your solution.



$y = \frac{3}{2}x - 3$

$2x + y = 4$