Dear Pre-Calculus Students,

Welcome to Pre-Calculus. As the name implies, this course is offered to prepare you to take "higher level" mathematics with the emphasis on preparation for the next level – CALCULUS! A graphing calculator is required for this course (TI-83, or above is preferred).

Attached is an assignment that you will need to have done on the first day of school. It will be collected to be checked for completion and accuracy. The following day will serve as a quick review of all the material (in which the assignment will be returned), and then a test will be administered the following day (the third day of school). As you look at the material you should see that it is all review and future class time will not be used to go over it – i.e. this is material that you should know. I suggest that you complete the assignment as soon as possible and then review it the last week of summer.

- Please show your work and provide your answers in the spaces provided
- If you need any help, please refer to the links found on the summer homework page
- No calculator should be used on this assignment

Enjoy your summer!

Mr. Davis

Pre-Calculus **Name: _____**

Summer Homework Assignment

1. Classifying Number

Identify which numbers are natural (counting) numbers, integers, rational numbers, irrational numbers, and real numbers by checking the appropriate boxes.

Number	Natural	Integer	Rational	Irrational	Real
-3					
$4/3$					
0.12					
$\sqrt{2}$					
π					
$2.\overline{15}$					

2. Integer Exponents

Simplify the expression so that all exponents are positive.

$\frac{(3xy^{-1})^{-2}}{(2x^{-1}y)^3}$ Answer: _____

3. Polynomials

Peform the indicated operation.

a.) $(x+1)^2-(x^2+1)$ Answer: _____

b.) $(4x-5)^2$ Answer: _____

4. Factoring Polynomials

Factor each completely.

a.) x^2-9 Answer: _____

b.) $4x^2-12$ Answer: _____

c.) $2x^2-x-6$ Answer: _____

5. Solve Equations

Solve for the variable in each equation.

a.) $\frac{2x}{3}+\frac{3}{4}=\frac{5x}{6}$ Answer: _____

b.) $2x^2+3x=1$ Answer: _____

c.) $x^2+6x=5$ Answer: _____

d.) $\frac{2}{x-3}+\frac{2}{x-2}=\frac{10}{x^2-5x+6}$ Answer: _____

e.) $4x^3-12x^2+8x=0$ Answer: _____

f.) $\sqrt{x+10}=x-2$ Answer: _____

g.) $(x+1)^{\frac{2}{3}}=4$ Answer: _____

6. Rational Expressions

Simplify each rational expression to lowest terms.

a.) $\frac{24x^2}{12x^2-6x}$ Answer: _____

b.) $\frac{x^2+4x+4}{x^2-16}$ Answer: _____

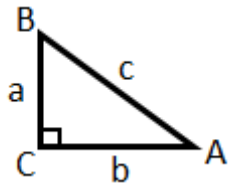
c.) $\frac{1}{\sqrt{x}+3}$ *rationalize Answer: _____

7. Geometry Review

Find the missing lengths.

a.) $a=15, c=21, b=?$ Answer: _____

b.) $A=45^o, c=16, a=?$ Answer: _____



8. Equations of Lines

Write the equation of the line that satisfies each of the following conditions.

a.) Passes through the points $(2,5)$ and $(0,1)$. Answer: _____

b.) Perpendicular to $y=\frac{2}{3}x-10$ and passes through $(-3,-3)$. Answer: _____