Name: _____ Date: _____

Summer Assignment: Pre-Calculus

For the following problems, please show your work neatly and in an organized way. Circle or box in your final answer.

    1.) Evaluate the expression $4x^2 - 5x + 1$ when x = −2.

    2.) Solve the following equation: 12(x - 1) = 8(x + 1)

    3.) Victoria and Margaret are 625 miles apart and traveling straight toward each other. If Victoria's speed is 55 mph and Margaret's speed is 70 mph, how many hours will it be before the two meet?

    4.) What are the x and y-intercepts of the equation 3x - 2y = 12?

    5.) Solve the system of equations: 4x - 2y = 10
    x + 3y = 15

6.) Factor the following trinomial: $3x^2 + x - 14$

7.) Find the equation of the line through (3, –6) that is parallel to $y = \frac{2}{3} x + 3$.

8.) Simplify the following: $(5 + 2\sqrt{3})(\sqrt{3} - 3)$

9.) The length of a rectangular swimming pool is 20 feet greater than the width. The surface area of the pool is 1,500 square feet. What are the length and width of the pool?

10.) What quadratic equation has -1 and 3 as solutions?

11.) Solve the following compound inequality. Graph the solution set on a number line:
$$-6 \leq 2(x + 4) \leq 4$$

12.) Write the equation of the line described. State your answer in the form specified.

" Passes through the point (-2,3) and is perpendicular to the line 3x + 4y = 24 ;(Standard Form)"

13.) Simplify the following radical expression:
$$3\sqrt{24} + 8\sqrt{54}$$

14.) Solve the following equation:
$$\frac{x}{x+2} - \frac{2}{2x-1} = \frac{1}{5}$$

15.) If f(x) = $x^2 - 3$ and g(x) = 2x + 5, find f(g(-4))