

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Calculus Summer Assignment:

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

1.) Write an equation of the line through (3, -2) perpendicular to the line  $y = -\frac{3}{2}x + 4$  in slope intercept form.

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

3.) Write a quartic function with zeros  $\pm 3$  and  $\pm 4$

4.) Find the value of each expression without using a calculator:

a.)  $\sin \frac{5\pi}{3}$

b.)  $\cos 240^\circ$

c.)  $\tan \frac{3\pi}{4}$

5.) Simplify the following:

$$(5 + 2\sqrt{3})(\sqrt{3} - 3)$$

6.) Simplify the following expression:  $\sin A \tan A + \sin (90^\circ - A)$

