Intro. to Calculus

Name:_____

Summer 2019

Due: Wednesday, July 24

Homework 3 - 2.2, 2.3, 2.4

Total:_____ / 18

1. Use the product rule to find the derviatives of the following functions. /6

   (a) $f(x) = (3x^2 + 4x + 2)(4x - x^2)$

   (b) $g(x) = (-4x^4 - 5x + 3)(x + 1)$

   (c) $f(x) = (x^5)(x^4 - 5x + 3)$

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

   (e) $h(x) = (6x + 5)(-3x^2 + 5)$

   (f) $f(x) = (x^2 + x)(5x^5 + 3x^3 + 7x)$

2. Use the quotient rule to find the derviatives of the following functions.

(a) $f(x) = \dfrac{x^2}{x^4 + 3x + 1}$

(b) $g(x) = \dfrac{x+1}{3x+6}$

(c) $f(x) = \dfrac{8x^3 + x^2 + 7}{x^2 + 1}$

(d) $h(x) = \dfrac{3x+2}{x}$

(e) $f(x) = \dfrac{1}{x^3}$

(f) $h(x) = \dfrac{4x^2 + 5x + 3}{x^4 + 4x + 7}$

3. Use the chain rule to find the derviatives of the following functions.  /6

(a) $f(x) = (5x^4 + 8x)^{79}$

(b) $g(x) = (x + 4)^5$

(c) $f(x) = (2x + 2)^5 + (2x + 2)^4$

(d) $f(x) = 5(x^2 + 2x + 5)^7 + 2(x^2 + 2x + 7)^3$

(e) $g(x) = 6(3x^2 + 4x + 2)^3 + 5(3x^2 + 4x + 2)^2$

(f) $h(x) = (8x^8 + 8)^8$