Calculus I Section 2.2 Homework

3) $y' =$ _____

5) $y' =$ _____

7) $y' =$ _____ Hint: $\frac{1}{x^5} = x^{-5}$

11) $f'(x) =$ _____

15) $g'(x) =$ _____

19) $y' =$ _____

23) $y' =$ _____

31)

a) $f'(x) =$ _____ Hint: $\frac{8}{x^2} = 8x^{-2}$

b) Slope of tangent line passing through (2, 2) = $f'(2) =$ _____?_____

c) Equation of Tangent Line passing through (2, 2):_____

Formula for equation of tangent line: $y - y_1 = m(x - x_1)$.

35)

a) $f'(x) =$ _____

b) Slope of tangent line passing through (1, 1) = $f'(1) =$ _____?_____

c) Equation of Tangent Line passing through (1, 1):_____

Formula for equation of tangent line: $y - y_1 = m(x - x_1)$.

39) $f'(x) =$ _____

43) $f'(x) =$ _____ Hint: $\frac{4x^3 + 3x^2}{x} = \frac{4x^3}{x} + \frac{3x^2}{x} = 4x^2 + 3x$

47) $y' =$ _____

49) $f'(x) =$ _____ Hint: $\sqrt{x} = x^{1/2}$; $\sqrt[3]{x} = x^{1/3}$

53)

a) $y' =$ _____

b) m = Slope of tangent line passing through (1, 0) = $y'(1) =$ _____?_____

c) Equation of tangent line:_____?_____

Formula for equation of tangent line: $y - y_1 = m(x - x_1)$.

55) Hint: $y = \dfrac{2}{\sqrt[4]{x^3}} = \dfrac{2}{x^{3/4}} = 2x^{-3/4}$

a) $y' =$ _____

b) m = Slope of tangent line passing through (1, 2) = $y'(1)$ = _____?_____

c) Equation of tangent line:_____?_____

Formula for equation of tangent line: $y - y_1 = m(x - x_1)$.

57) To find horizontal tangent line, find y' and set $y' = 0$ and solve for x.

a) Find $y' =$ _____

b) Set $y' = 0$ and solve for x.

c) Horizontal Tangent Line (if any) occurs at the points :_____