3.2 Basic Differentiation Rules and Rates of Change

Name: Date: May 28, 2015

P 18. Use the rules of differentiation to find the derivative of

$$y = 2x^3 + 2x^2 - 1$$

P 20. Use the rules of differentiation to find the derivative of

$$g(t) = \pi \cos t$$

P 24. Use the rules of differentiation to find the derivative of

$$y = \frac{3}{4}e^x + 2\cos x$$

P 32. Find the slope of the tangent line to the graph of

$$f(t) = 2 - \frac{4}{t}$$

at the point $(4, 1)$.

P 34. Find the slope of the tangent line to the graph of

$$f(x) = 2(x-4)^2$$

at the point $(2, 8)$.

P 44. Find the derivative.

$$h(x) = \frac{4x^3 + 2x + 5}{x}$$

P 50. Find the derivative.

$$f(x) = \frac{2}{\sqrt[3]{x}} + 3\cos x$$

P 56. Find an equation of the tangent line to the graph of $h(t) = \sin t + \frac{1}{2}e^t$ at the point $(\pi, \frac{1}{2}e^\pi)$.

P 58. Determine the point(s) (if any) at which the graph of $y = x^3 + x$ has a horizontal tangent line.