3.1 The Derivative and the Tangent Line Problem

Name: Date: May 28, 2015

P 8. Find the slope of the tangent line to the graph of $f(x) = 5 - x^2$ at $(3, -4)$.

P 10. Find the slope of the tangent line to the graph of $h(t) = t^2 + 4t$ at $(1, 5)$.

P 14. Find the derivative of $f(x) = 7x - 3$.

P 18. Find the derivative of $g(x) = x^2 - 5$.

P 20. Find the derivative of $f(x) = x^3 + x^2$.

P 21. Find the derivative of $f(x) = \frac{1}{x-1}$.

P 24. Find the derivative of $f(x) = \frac{4}{\sqrt{x}}$.

P 30. Graph $f(x) = x^2 + 3$ and the tangent line to the graph of f at the point $(-1, 4)$.

P 31. Graph $f(x) = x + \frac{4}{x}$ and the tangent line to the graph of f at $x = -4$.

P 33. Find an equation that is tangent to the graph of $f(x) = x^2$ and is parallel to $2x - y + 1 = 0$.

P 38. Find an equation that is tangent to the graph of $f(x) = \frac{1}{\sqrt{x-1}}$ and is perpendicular to $x + 2y + 7 = 0$.