Name: _____   Date: _____

Learning Goal 3.1	Using all basic derivative rules.

More Questions

1. Find the derivative of the following functions.

a. $f(x) = 5x^4$

b. $f(x) = \dfrac{3}{\sqrt{x}}$

c. $f(x) = 5x^5 + 2x^4 - 7x^2 - 9$

d. $y = x^{-100}$

e. $y = x^{3/4}$

f. $g(x) = -4x^5 + 3x^2 - \dfrac{5}{x^2}$

2. Find the slope and equation of the tangent line at $(1, 3)$ to the graph of
$$f(x) = 2x + \frac{1}{\sqrt{x}}$$

3. The demand function for a certain product is given by
$$p(x) = \frac{\sqrt{x}}{2} - \frac{x}{40} + 2\,000$$
where p is the price measured in dollars and the quantity x is measured in units.
   a. Find the rate of change of price p per thousand products with respect to quantity x.
   b. How fast is the price changing with respect to x when $x = 25$ and $x = 400$?