Name: _____   Date: _____

Learning Goal 3.1	Using all basic derivative rules.

Constant Rule

Power Rule

$f(x) = x$

$f(x) = x^2$

$f(x) = x^3$

$f(x) = x^4$

$f(x) = x^5$

Example Use different notations to represent the derivatives of the following.

a. $f(x) = x^6$ b. $y = x^{1000}$ c. $v = s^3$ d. $\dfrac{d}{dr}(r^4)$

e. $f(x) = \dfrac{1}{x^2}$ f. $y = \sqrt[3]{x^2}$ g. $f(x) = x\sqrt{x}$

Constant Multiple Rule   **Sum and Difference Rule**

Example

a. $f(x) = 3x^4$ b. $\dfrac{d}{dx}(-x)$ c. $\dfrac{d}{dx}(x^4 - 10x^3 + 6x + 5)$ d. $y = \sqrt{x}(x-1)$

Example Find the equation of the tangent line to the curve $y = (1 + 2x)^2$ at $(1, 9)$.