

3.3 Rules for Differentiation Day 1

Constant rule

$$\frac{d}{dx}(c) = 0$$

Power rule

$$\frac{d}{dx}(x^n) = nx^{n-1}$$

Ex 1) $y = x^3$

Ex 2) $y = x^{10}$

Ex 3) $y = \sqrt{x}$

Ex 4) $y = \frac{1}{x^3}$

Constant multiple rule

$$\frac{d}{dx} c \cdot f(x) = c \cdot \frac{d}{dx} f(x)$$

Ex 5) $y = 5x^2$

Ex 6) $y = 3x^6$

Ex 7) $y = \frac{2}{x^3}$

Ex 8) $f(x) = 6x^3$

A) Find the slope at $x = 2$

B) Where is the slope of the tangent horizontal?