Derivatives using Power Rule

Find the derivatives using power rule:

$y = 10x^3$

$y = \frac{1}{2}x^{-2}$

$y = \frac{1}{2\sqrt{x}}$

$y = 3x^{\frac{-1}{15}}$

$y = 8x^6 + 2x^{17}$

$y = \sqrt[5]{x}$

$y = x^{\frac{1}{31}} + x^{\frac{-1}{7}}$

$y = 2x^{12} + 6x^7 + x^4$

$y = \frac{5}{3}x^3 - \frac{7}{6}x^6 + \frac{6}{4}x^8$

$y = \frac{1}{2}x^{\frac{3}{2}} - \frac{22}{7}x^{\frac{-5}{2}} + x^{\frac{3}{7}}$

Student Name: _____   Score:

Derivatives using Power Rule

Sheet 1

$$\frac{dy}{dx} = 30x^2$$

$$\frac{dy}{dx} = \frac{-1}{x^3}$$

$$\frac{dy}{dx} = \frac{-1}{4}\, x^{\frac{-3}{2}}$$

$$\frac{dy}{dx} = -\frac{1}{5}\, x^{\frac{-16}{15}}$$

$$\frac{dy}{dx} = 48x^5 + 34x^{16}$$

$$\frac{dy}{dx} = \frac{1}{5}\, x^{\frac{-4}{5}}$$

$$\frac{dy}{dx} = \frac{1}{31}\, x^{\frac{-30}{31}} - \frac{1}{7}\, x^{\frac{-8}{7}}$$

$$\frac{dy}{dx} = 24x^{11} + 42x^6 + 4x^3$$

$$\frac{dy}{dx} = 5\,x^2 - 7\,x^5 + 12\,x^7$$

$$\frac{dy}{dx} = \frac{3}{4}\, x^{\frac{1}{2}} + \frac{55}{7}\, x^{\frac{-7}{2}} + \frac{3}{7}x^{\frac{-4}{7}}$$