

5111

2344 a)

$$y = x^{-3}$$
$$y' = -3x^{-4}$$

b)

$$y = \frac{1}{x^4}$$

$$y = x^{-4}$$
$$y' = -4x^{-5}$$
$$= \frac{-4}{x^5}$$

c)

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

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

d)

$$y = x + \frac{5}{x^3}$$

$$y = x + 5x^{-3}$$

$$y' = 1 - 10x^{-3}$$

$$y' = 1 - \frac{10}{x^3}$$

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

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

$$x^{\frac{3}{2}} = \sqrt{x^3}$$

$$x^{-\frac{3}{2}} = \frac{1}{\sqrt{x^3}}$$

$$y = \frac{1}{3\sqrt{x}}$$

$$y = \frac{1}{3} x^{-\frac{1}{2}}$$

$$y' = -\frac{1}{2} \cdot \frac{1}{3} x^{-\frac{3}{2}}$$

$$= -\frac{1}{6\sqrt{x^3}}$$