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$$a) y = 7x^3 - 2x^2 + x + 2$$

$$y = \frac{d}{dx}(7x^3) + \frac{d}{dx}(-2x^2) + \frac{d}{dx}(x) + \frac{d}{dx}(2)$$

$$y = 7 \times 3x^2 - 2 \times 2x + 1 + 0$$

$$\underline{y = 21x^2 - 4x + 1}$$

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

b)

$$y = (x+3)(x+2)$$

$$y = \frac{d}{dx}((x+3) + (x+2))$$

$$y = \frac{d}{dx}(x^2 + 2x + 3x + 6)$$

$$y = \frac{d}{dx}(x^2 + 5x + 6)$$

$$y = \frac{d}{dx}(x^2) + \frac{d}{dx}(5x) + \frac{d}{dx}(6)$$

$$\underline{y = 2x + 5}$$

$$\frac{d}{dx}(f+g) = \frac{d}{dx}(f) + \frac{d}{dx}(g)$$

$$\frac{d}{dx}(ax) = a$$

c)

$$y = \frac{1}{x^3} + \sin 3x$$

$$y = \frac{d}{dx}\left(\frac{1}{x^3} + \sin 3x\right)$$