

Power, Product, & Quotient Rules

$$3. f(x) = 2x^{1/2} + 7x^{3/2} - 2x^{-2}$$

$$f'(x) = x^{-1/2} + \frac{21}{2}x^{1/2} + 4x^{-3}$$

$$5. f(x) = \frac{(x+9)(x-2)}{(x+9)}$$

$$f(x) = x - 2$$

$$f'(x) = 1$$

$$9. f(x) = 2x^{-3} \sec x$$

$$f'(x) = (-6x^{-4}) \sec x + (2x^{-3}) \sec x \tan x$$

$$f'(x) = -2x^{-4} \sec x (3 - x \tan x)$$

$$13. f(x) = 2e^x \cdot x^{1/2}$$

$$f'(x) = 2e^x(x^{1/2}) + (2e^x)\frac{1}{2}x^{-1/2}$$

$$f'(x) = 2e^x x^{1/2} + e^x x^{-1/2}$$

$$f'(x) = e^x x^{-1/2} (2x + 1)$$

$$15. f(x) = \frac{\tan x}{2x^2 + 1}$$

$$f'(x) = \frac{(\sec^2 x)(2x^2 + 1) - (\tan x)(4x)}{(2x^2 + 1)^2}$$