

Derivative at a Point WS 2

Directions: Find the indicated derivative at the given x -value.

$$1) f'(1); f(x) = \frac{\sqrt{x^2 - 4}}{x + 5}$$

$$2) f'(0); f(x) = \sqrt{\tan(2x)}$$

$$3) \left. \frac{dy}{dx} \right|_{x=2}; y = e^{-x} + \sqrt{x}$$

$$4) f''(\pi); f(x) = \sec 2x$$

$$5) \left. \frac{d^2y}{dx^2} \right|_{x=1}; y = 2x^3 - 7\sqrt{x} + \frac{3}{\sqrt{x}}$$

$$6) f'(1); f(x) = e^x \ln x$$

$$7) f'(0); f(x) = \frac{\ln(\sqrt{x+1})}{3x}$$

$$8) \left. \frac{dy}{dx} \right|_{x=1}; y = \frac{(\sin x)(\log x - 2)}{\sqrt{5x}}$$