

Derivative at a Point WS 1

Directions: State the domain of the function, then find the indicated derivative at the given x -value.

1) $f(x) = \sqrt{x^2 + 18}$, $f'(2) = ?$

2) $g(x) = \sin 4x$, $g''(\pi) = ?$

3) $h(x) = \frac{16 - x^2}{3x}$, $h'(0) = ?$

4) $\phi(x) = e^{5x}$, $\phi''(1) = ?$

5) $f(x) = \tan 2x$ on $[-2\pi, 2\pi]$, $f'(-\pi) = ?$

6) $g(x) = e^{\frac{\cos x}{x+1}}$, $g'(0) = ?$

7) $h(x) = \ln 4x$, $h'(\frac{1}{4}) = ?$

8) $f(x) = x^{\ln x}$, $f'(0) = ?$

9) $g(x) = \frac{3x}{\sqrt{2x-1}}$, find $g'(x)$ at $x=1$

10) $h(x) = \sqrt{\sin x}$ on $(0, 2\pi)$, $h'(0) = ?$