

3.6 Calculating Higher-Order Derivatives

Calculus

Name: _____

CA #2

Find $\frac{d^2y}{dx^2}$ based on the given information.

1. $y = 2x - 3 \cos x$

2. $y^3 + 2y = 3x + 10$

3. $\sin y = 8x$

Evaluate the 2nd derivative at the given point.

4. If $f(x) = 2x^4 - \frac{8}{x} + 5$, find $f''(2)$.

5. If $f(x) = \tan x$, find $f''\left(\frac{\pi}{4}\right)$.

6. If $\frac{dy}{dx} = \ln y - \frac{1}{x}$, find $\frac{d^2y}{dx^2}$ at $\left(\frac{1}{4}, 1\right)$

7. If $\frac{dy}{dx} = e^y + x^{\frac{3}{2}}$, find $\frac{d^2y}{dx^2}$ at $(4, 0)$

1. $3 \cos x$	2. $\frac{-54y}{(3y^2+2)^3}$	3. $64 \sec^2 y \tan y$	4. 94	5. 4	6. 12	7. 12
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Answers to 3.6 CA #2