Quiz 3.6

Name

1. Let f be the function given by $f(x) = 2x^3 - 5x^2 + 8x + 1$ on the closed interval $[0, 3]$. What is the instantaneous rate of change of f' at $x = 1$?

(A) 2

(B) 4

(C) 6

(D) 8

2. Let f be the function given by $f(x) = \sin x + e^{-x} + 3x$. Which of the following statements is true for $y = f(x)$?

(A) $y'' = \sin x + e^{-x}$

(B) $\frac{d^3y}{dx^3} = \frac{dy}{dx}$

(C) $f^{(4)}(x) = f'(x) \cdot f'''(x)$

(D) $y - \frac{d^4y}{dx^4} = 3x$

3. If $y = e^{x^3}$, then $\frac{d^2y}{dx^2} =$

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(A) $18x^3e^{x^3}$

(B) $9x^4e^{2x^3}$

(C) $\left(6x+3x^2\right)e^{x^3}$

(D) $\left(6x+9x^4\right)e^{x^3}$