

Unit 7 MC Practice

For problem #1-3, find the derivative:

1. $y = \ln(\sec x + \tan x)$

- A) $\sec x$ B) $\frac{1}{\sec x}$ C) $\frac{1}{\sec x + \tan x}$
D) $\tan x + \frac{\sec^2 x}{\tan x}$ E) $\frac{-1}{\sec x + \tan x}$

2. $y = \ln\left(\frac{e^x}{e^x - 1}\right)$

- A) $x - \frac{e^x}{e^x - 1}$ B) $\frac{1}{e^x - 1}$ C) $\frac{-1}{e^x - 1}$
D) 0 E) $\frac{e^x - 2}{e^x - 1}$

3. $y = e^{-x} \cos 2x$

- (A) $-e^{-x}(\cos 2x + 2 \sin 2x)$
(B) $e^{-x}(\sin 2x - \cos 2x)$
(C) $2e^{-x} \sin 2x$
(D) $-e^{-x}(\cos 2x + \sin 2x)$
(E) $-e^{-x} \sin 2x$

50. If $f(x) = \ln x^3$, then $f''(3)$ is

- (A) $-\frac{1}{3}$ (B) -1 (C) -3 (D) 1 (E) none of these

56. If $y = e^x(x - 1)$ then $y''(0)$ equals

- (A) -2 (B) -1 (C) 0 (D) 1 (E) none of these

64. $\lim_{h \rightarrow 0} \frac{\ln(e+h) - 1}{h}$ is

- (A) 0 (B) $\frac{1}{e}$ (C) 1 (D) e (E) nonexistent

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Answers:

1. A
2. C
3. A
4. A
5. D
6. B