MATHEMATICS WORKSHEET

Derivatives of Logarithmic Functions

Name: _____ Class: _____ Date: _____

Choose the correct answer (A, B, C, or D) for each question.

1. If $y = \ln(\sin x)$, then $dy/dx =$

A. $\tan x$
B. $\cot x$
C. $-\cot x$
D. $\cos x$

2. If $y = 1 / \ln(3x)$, then $dy/dx =$

A. $1 / [x \ln(3x)]$
B. $-3 / [\ln(3x)]^2$
C. $-1 / [x(\ln(3x))^2]$
D. $-1 / [3x(\ln(3x))^2]$

3. If $y = (1/2) \ln[(1 + x)/(1 - x)]$, then $dy/dx =$

A. $1 / (1 - x^2)$
B. $1 / (1 + x^2)$
C. $-1 / (1 - x^2)$
D. $1 / [2(1 - x^2)]$

4. If $y = \ln(\ln x)$, then $dy/dx =$

A. $1 / \ln x$
B. $1 / x$
C. $\ln x / x$
D. $1 / [x \ln x]$

5. If $y = (\ln t) / t$, then $dy/dt =$

A. $1 / t^2$
B. $(1 - \ln t) / t^2$
C. $(\ln t - 1) / t^2$
D. $1 - \ln t$

LIVEWORKSHEETS