

MATH 141 (Section 5 & 6)
Prof. Meade

University of South Carolina
Fall 2013

Quiz 2
September 5, 2013

Name: Key
Section: 005 / 006 (circle one)

1. (6 points) Starting with the graph of $y = e^{-2x}$, write the equation of the graph that results from

- (a) shifting 3 units downward

$$y = e^{-2x} - 3$$

- (b) reflecting about the x -axis

$$y = -e^{-2x}$$

- (c) reflecting about the x -axis and then about the y -axis

$$y = -e^{-2(-x)} = -e^{2x}$$

2. (2 points) Express $\ln(a-b) + 2\ln(a+b)$ as a single logarithm.

$$\begin{aligned} &= \ln(a-b) + \ln(a+b)^2 \\ &= \ln((a-b)(a+b)^2) \end{aligned}$$

3. (2 points) Simplify the expression $\sin(\arctan(x))$.

$$\begin{aligned} \text{let } \theta &= \arctan x \\ \text{then } \sin \theta &= \frac{x}{\sqrt{1+x^2}} \end{aligned}$$

