

Quiz #2

Name: _____

Math 180, Prof. Beydler

Wednesday, April 22, 2020

Directions: We're working on the honor system here: no notes, books, phones, or computers during the quiz (except for using a computer to write your answers). Also, no getting help from other people. You may e-mail me to ask for clarification about any problem. **Show all work.** A **scientific calculator** is allowed. Write your answers in the indicated places, or box your answers. Good luck!

1. (4 points) Find an equation of the tangent line to $2y - 1 = e^{xy}$ at $(0, 1)$.

Answer: _____

2. (4 points) Use logarithmic differentiation to find the derivative of y with respect to x .

$$y = x^{\sin x}$$

$\frac{dy}{dx} =$ _____

3. (4 points) A ladder 10 ft long rests against a vertical wall. If the bottom of the ladder slides away at 3 ft/s, how fast is the top sliding down the wall when the bottom is 2 ft from the wall? Be sure to write the units for your answer.

Answer: _____

4. (3 points) Prove that the derivative of $y = \sec x$ is $\frac{dy}{dx} = \sec x \tan x$ by using the derivatives of $\sin x$ and/or $\cos x$.