

# MAT 201 Quiz 11

Apr. 9, 2020

1. 15 Find the derviative of the function

$$h(z) = \tan(\ln(z^2)).$$

2. 17 Find the derviative of the function

$$p(w) = \arctan(e^{w^2}).$$

3. 21 Let  $f(x)$  be a differentiable function with a differentiable inverse function  $f^{-1}(x)$ . Suppose we know that  $f(3) = 4$ ,  $f'(3) = 6$ ,  $f(5) = 3$ ,  $f'(5) = 7$ . Find the derivative of  $f^{-1}(x)$  at  $x = 3$ .

4. 22 Use implicit differentiation to find the slope of the tangent line of  $x^3 - 2xy + xy^2 = y^3$  at  $(0, 0)$ .