Student ID: 201051040

Math 201
Fall 2014, Term 141

Quiz 4 Section 14
Version A

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Serial Number:1

Instructions: Show Your Work!

1. (3 pts) Find $\frac{\partial w}{\partial u}$ and $\frac{\partial w}{\partial v}$ when $u = v = 0$ if

$$w = \ln \sqrt{1+x^2} \ -\tan^{-1} x, \qquad \text{and} \qquad x = 2e^u \cos v.$$

2. (4 pts) What is the largest value that the directional derivative of

$$f(x, y, z) = \ln xy + \ln yz + \ln xz,$$

can have at the point $(1, 1, 1)$?

3. (3 pts) Find an equation for the plane that is tangent to the surface

$$z = e^{xy}\,(1 + 2\ln y)$$

at the point $(0, 1)$.