

Quiz 4, MAT329, Fall 2015

Name: _____

- a. What is the most important definition in calculus? I'll start it for you:

$$f'(x) =$$

Hint: it explains why we're so interested in limits!

- b. Fill in the blanks: Differentiability implies _____, but _____ does not imply differentiability.

Now explain **why it makes sense**.

- c. Suppose that $z = f(x, y)$, and that $x = g(t)$ and $y = h(t)$. Use the chain rule to write $\frac{dz}{dt}$.

- d. What conditions guarantee differentiability of f at (a, b) ?