

**Math 251****Quiz 05 (WeBWorK 6)**

October 18, 2013; 10 minutes

Name: \_\_\_\_\_

This quiz is *open-note*, but no books or calculators may be used. In calculation, you can show work at your discretion, but remember that I can't give partial credit for calculations I can't see. Explain anything that seems to need explaining.

1. If  $z = (x + y)e^y$ ,  $x = u^2 + v^2$ , and  $y = u^2 - v^2$ , find the indicated partial derivatives using the chain rule. Express your answers in terms of  $u$  and  $v$ .

(a) (4 points)  $\frac{\partial z}{\partial u} =$

(b) (4 points)  $\frac{\partial z}{\partial v} =$

2. (8 points) Suppose that  $z^7 = 11xe^{y/z}$ . Calculate the indicated partial derivatives.

(a) (4 points)  $\frac{\partial z}{\partial x} =$

(b) (4 points)  $\frac{\partial x}{\partial z} =$