

234 Quiz 4

Section:

Name:

18 minutes. Bonus on back

1. (4) Consider the quadratic form $Q(x, y) = -2xy + \frac{1}{2}y^2$. Determine which kind of form is this and write it in standard form by completing the square. (Hint: if x^2 is present, you can use x^2 to complete the square, but x^2 is absent here and you can use y^2 .)
2. (6) Compute f_x (or $\partial f / \partial x$) and f_y (or $\partial f / \partial y$) for the two functions:
 - $f(x, y) = xy \ln(xy)$
 - $f(x, y) = g(\sin(xy))$

where in the second, g is a single-variable function. (Notice that the first is your homework)

Bonus(2 pts) Consider the function $f(x, y) = \frac{xy}{x^2+y^2}$. If I define the value of this function at $(0, 0)$ to be 0, would it be continuous at $(0, 0)$?