Quiz 4

Math 53, section 213

October 1, 2014

1. Level curves are shown for a function f. Determine whether the following partial derivatives are positive or negative at the point P. (2 points each)

   (a) f_x

   (b) f_y

   (c) f_{xx}

   (d) f_{xy}

   (e) f_{yy}

2. If $z = f(x, y)$ where f is differentiable, and $x = g(t)$, $y = h(t)$, $g(3) = 2$, $h(3) = 7$, $g'(3) = 5$, $h'(3) = -4$, $f_x(2, 7) = 6$, and $f_y(2, 7) = 8$, find dz/dt when $t = 3$.