Quiz 2

Problem 1   (4 pts) Find the partial derivatives of the following functions

$$f(x, y) = -8e^{x-4y} \qquad g(x, y) = 2x + \cos(\frac{x}{y})$$

Problem 2   (3 pts) Find all of the second order derivatives of f except for f_{zz}. (Hint: There are 5 of them, 2 of them are 0).

$$f(x, y, z) = \frac{6x - 5y}{4z + 5}$$

Problem 3   (2 pts) Draw the level curves at height $z = 0$ and $z = 1$ of the function

$$x^2 + zy^2 = 1$$

Problem 4   (1 pts) Let $f(x, a)$ be the function

$$f(x, a) = \int_0^x \cos(az)dz$$

Find the partial derivative f_a (i.e. the partial derivative in the a-direction).