Instructions. Show all work, with clear logical steps. No work or hard-to-follow work will lose points.

Problem 1. (5 points) Given

$$f_x(x,y) = 8xy + \frac{6}{x}, \quad f_y(x,y) = 4x^2 + \frac{6}{y},$$

Find f_{xx}, f_{yy} , and f_{xy} .

Problem 2. (3 points) A function z = f(x, y) satisfies

$$f_{xy} = 13x^2 \sin(xy)e^{x+y}.$$

What is f_{yx} ?

Problem 3. (2 points) Give any comments about exam 3 and/or the course in general.