

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematics and Statistics**  
**Math 201 - Quiz 4**

Name:

Student ID #:

**Question 1.** Find and sketch the domain of  $f(x, y) = \frac{1}{\ln(y^2 - x)}$ .

**Question 2.** Determine, if it exists, the limit  $\lim_{(x,y) \rightarrow (0,0)} y \ln(x^2 + y^2)$ .

**QUESTIONS 3 IS ON THE BACK OF THE PAGE.**

**Question 3.** If  $f(x, y) = \cosh^2(x^2) \sinh(\sqrt{x} y)$ , then find  $\frac{\partial f}{\partial x}$ .