

Quiz-1

Q 1. Find and sketch the domain of the function.

$$f(x, y) = \ln(9 - x^2 - 9y^2)$$

Q 2. Sketch the graph and level curves (for  $k = -1, 0, 1, 2$ ) of the given surface. Also describe level curves in words.

$$f(x, y) = (y - 2x)^2$$

Q 3. Determine at what point the function is not continuous.

$$f(x, y) = \begin{cases} \frac{xy}{x^2 + xy + y^2} & \text{if } (x, y) \neq (0, 0) \\ 0 & \text{if } (x, y) = (0, 0) \end{cases}$$