

Quiz 5 Calculus III Fall 2015

Name:.....

Solve the following problems. Each problem is worth 5 points.

Q1. Either show that the limit does not exist, or prove that limit as $(x, y) \rightarrow (0, 0)$ exists and compute it.

(a) $f(x, y) = \frac{y^2 \sin^2 x}{x^4 + y^4}$

(b) $f(x, y) = \frac{y^2 \sin^2 x}{3x^2 + y^2}$

Q2. Compute $f_x(1, 2)$, $f_y(1, 2)$ and $f_{xy}(1, 2)$ for the function

$$f(x, y) = \frac{\sin(xy + y^2)}{x + y}$$