

Quiz 5

Your Name (please PRINT): _____

Student ID Number: _____

1. Find the critical points to the given function and use the second derivative test to determine whether they are local minimum, local maximum or saddle points.

$$f(x, y) = x^3 - 6xy + 8y^3$$

2. Find the directional derivative of $f(x, y) = x^2e^{-y}$ at the point $(-2, 0)$ in the direction $\langle 4, -3 \rangle$.

3. Find a direction in which the directional derivative of $f(x, y) = x^2e^{-y}$ at the point $(-2, 0)$ is maximized.