

Worksheet 10: Maximum and Minimum Values

Name: _____

ID: _____

1. Consider the function: $f(x, y) = 2x^2 + 4xy + 4y^2 - 6x + 7$.

a. Find all local maxima, local minima, and saddle points of f .

b. Are the local maxima/minima found above absolute?

Hint: Write $2x^2 = x^2 + x^2$ and complete the squares.

2. True or False? (Circle one and justify your answer.)

a. If $f(x_0, y_0)$ is a relative maximum, then $f_x(x_0, y_0) = f_y(x_0, y_0) = 0$. TRUE FALSE

b. If $f(x_0, y_0)$ is a relative minimum, then $f_x(x_0, y_0) = f_y(x_0, y_0) = 0$. TRUE FALSE