

Full name: \_\_\_\_\_ GT ID: \_\_\_\_\_ Sec: \_\_\_\_\_

**Quiz 6 Version C**

You have 15 minutes to take the quiz. No phones, notes, or use aids of any kind is permitted.

1. (2 points) **[Lagrange Multipliers]** *Fill in the blanks.*

The Lagrange equations are used to solve  optimization problems, and consist of the equation  $g(x, y) = k$  along with a set of equations that says that the gradient of the objective function should be  to the gradient of the constraint.

2. (8 points) **[Classifying Critical Points]**

Find all critical points and use the Hessian matrix to classify the critical points of the function.  
[AJN]

$$f(x, y) = x^4 + y^4 + 4xy$$