

Full name: _____ GT ID: _____ Sec: _____

Quiz 6 Version B

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

1. (5 points) **[Critical Points]**Find all local maxima, local minima, and saddle points of the function $f(x, y)$. [AJN]

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

2. (5 points) **[Lagrange Multipliers]**Find the maximum and minimum value of $f(x, y)$ subject to the constraint $g(x, y) = k$ using the method of Lagrange multipliers. [AJN]

$$f(x, y) = x^2 + y^2 + z^2, \text{ subject to } x + y + z = 9.$$