

Name: \_\_\_\_\_

Math 233: Multivariate Calculus (Sect 13)

Instructor: Jennifer Li

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## Quiz 9

Please write neatly and show all of your work.

1. Find the absolute maximum and minimum values of  $f(x, y) = 2x^3 + y^4$  on the set  $D = \{(x, y) \mid x^2 + y^2 \leq 1\}$ .

2. Explain how the method of Lagrange multipliers works in finding the extreme values of  $f(x, y, z)$  subject to the constraint  $g(x, y, z) = k$ .