

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

**Math 2030, Fall 2017, Quiz 7**  
**20 October 2017**  
**R. Bruner**

*No calculators needed or allowed.*

1. Find the maximum and minimum values of  $3x + 4y$  on the circle  $x^2 + y^2 = 1$ .
2. Find and classify the critical points of  $f(x, y) = x^3 + xy^2 - 4x - y^2$ .