

**Math 2400 Calculus 3, Fall 2014**  
**Homework Set 6**

DUE DATE: 10/07/2014

1. Section 11.3: 73
2. Section 11.4: 29
3. Section 11.5: 15
4. Define

$$f(x, y) = \begin{cases} \frac{xy}{x^2+y^2} & \text{if } (x, y) \neq (0, 0) \\ 0, & \text{if } (x, y) = (0, 0) \end{cases}$$

- (a) Is  $f(x, y)$  continuous at  $(0, 0)$ ?
- (b) Does  $f_x(0, 0)$  or  $f_y(0, 0)$  exist? If so, compute them.