

## Math 201-152 Quiz 3

Name \_\_\_\_\_ Section \_\_\_ Id \_\_\_\_\_  
Serial#

Q1 a) Find the domain of the function

$$f(x, y) = \sqrt{x^2 + y^2 - 1} + \ln(4 - x^2 - y^2)$$

b) Draw the domain

Q2) Show that  $\lim_{(x,y) \rightarrow (0,0)} \frac{x^3 y}{x^3 + y^2}$  along every line through  $(0,0)$  is 0, but the limit at  $(0,0)$  does not exist.