

Name: _____

1. Consider the function

$$f(x,y) = \frac{3x^3}{x^2 + y^2}$$

(a) (3 points) Find $\lim_{(x,y) \rightarrow (0,0)} f(x,y)$ along the line $x = 0$.

(b) (3 points) Find $\lim_{(x,y) \rightarrow (0,0)} f(x,y)$ along the line $x = 2y$.

(c) (4 points) Find $f_y(x,y)$