

Math 21C
Kouba
Worksheet 2

1.) Write a precise ϵ/δ proof for each limit.

a.) $\lim_{(x,y) \rightarrow (0,0)} \sqrt{x^2 + y^2} = 0$

b.) $\lim_{(x,y) \rightarrow (0,0)} (2x^2 + 3y^2) = 0$

c.) $\lim_{(x,y) \rightarrow (1,-1)} (x + y) = 0$

d.) $\lim_{(x,y) \rightarrow (0,2)} (2x - y + 1) = -1$

e.) $\lim_{(x,y) \rightarrow (3,2)} xy = 6$

f.) $\lim_{(x,y) \rightarrow (-2,-1)} (3xy - y^2) = 5$

g.) $\lim_{(x,y) \rightarrow (2,3)} \frac{8x - 2y}{x + y} = 2$ (Challenging)