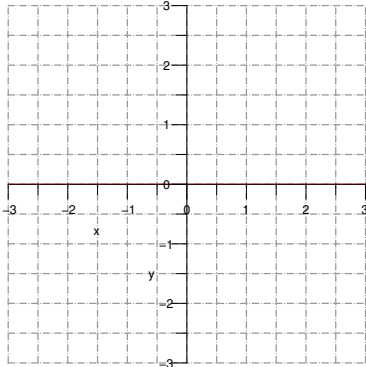


Math 303, Worksheet #1
Fall 2005

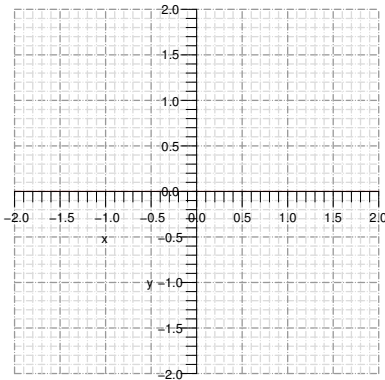
Name: _____

1. For each of the following functions, sketch and label the level curves for the given z values.

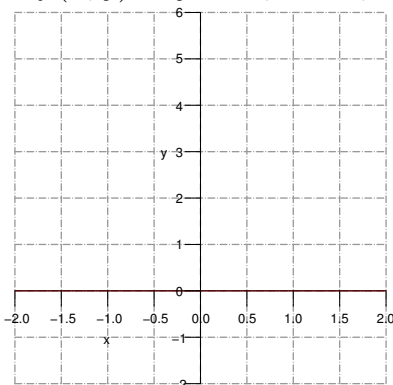
a. $f(x, y) = x + y, z = 0, \pm 1, \pm 2.$



b. $f(x, y) = x^2 + y^2, z = 1, 2, 3, 4.$



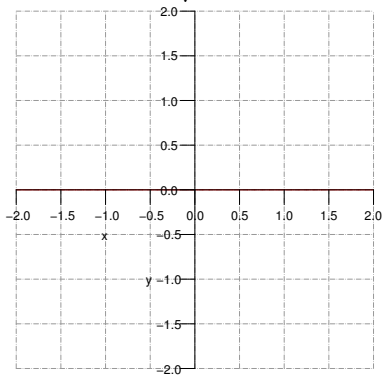
c. $f(x, y) = y - x^2, z = 0, \pm 1, \pm 2.$



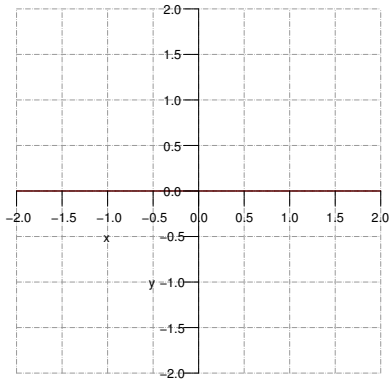
2. Use Maple to graph each of the functions above, and convince yourself that the graph agrees with your expectations.

3. Graph each of the functions below, and use the graph to sketch and label a contour diagram.

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



b. $f(x, y) = (x + y)^2$



c. $f(x, y) = x^2 - y^2$

