5. Let $f(x,y) = x^2 - y^2$. Graph and label the level sets which correspond to levels 1, 0, and −1 for this function.

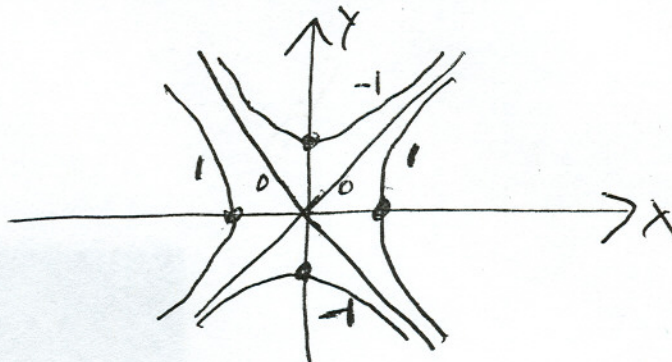level 1 $1 = x^2 - y^2$ hyperbola

level 0 $0 = x^2 - y^2$ 2 lines

$x = y, x = -y$

level −1 $-1 = x^2 - y^2$

$1 = y^2 - x^2$ hyperbola

6. Graph and name $z = x^2 + y^2$ in 3-space.

Paraboloid