Warm-up Problems - February 1, 2006

1. Plot the following in $\mathbb{R}^3$ (Hint: these are all planes.)

   (a) $z = -1$

   (b) $z = 3$

   (c) $x = -1$

   (d) $x = 3$

   (e) $y = -1$

   (f) $y = 0$

   (g) $y = 3$

Lecture Problems

2. Let $z = f(x, y) = 4x^2 + y^2$. Describe the cross sections and graph.

   (a) $x = 0$

   (b) $x = 1$

   (c) $x = -1$

   (d) $y = 0$

   (e) $y = 1$

   (f) $z = 0$

   (g) $z = 1$

   (h) $z = 2$

   (i) $z = -1$