Name _____

Homework 2
Section 12.2

1. (2) Problem #2 on page 650 of the text.

   (a) _____ (b) _____ (c) _____ (d) _____ (e) _____

2. (6) Find the equation for a plane which contains the intersection of the surfaces $z = \sqrt{x^2 + y^2}$ and $z = 6 - x^2 - y^2$. Describe the intersection in a sentence.

3. (6) Determine a formula for a function whose graph is a cone of circular cross-section which opens downward and has its vertex at $(2, 0, 3)$.

4. (2ea) By fixing one variable, determine a plane whose intersection with the graph of $f(x, y) = (x^2+1)\sin y + xy^2$ traces out the following. That is, determine an appropriate cross section.

   (a) Parabola

   (b) Straight Line

   (c) Sine Curve