Name _____

Homework 5
Section 12.5

1. (4) Describe the level surfaces of $f(x, y, z) = \cos(x + y + z)$. For what values of 'c' do level surfaces exist?

2. (4) Describe the level set of $F(x, y, z) = xyz$ containing the point $(5, 0, -2)$.

3. (4) Is it possible for a level set of a function of three variables, $f(x, y, z)$ to consist of a single point? If it is possible, provide an example. If it is not possible, explain why not.

4. (4) Describe the level surfaces of $3^{z-x^2-y^2}$.

5. (4) Consider the equation $2z = 4x^3 - y^2 + 6$. Determine a function which has $2z = 4x^3 - y^2 + 6$ as one of its level sets. Which level set is it?