Math 3113 - Multivariable Calculus
Quiz #10 - 2006.03.27

Name: _____

Consider the function

$$f(x, y) = \frac{1}{\sqrt{16 - x^2 - y^2}}.$$

1. What is the domain of $f(x, y)$?

2. What is the range of $f(x, y)$?

3. What do the level curves of $f(x, y)$ look like?

4. Sketch several level curves of $f(x, y)$.

5. Convert $f(x, y)$ to cylindrical coordinates $f(r, \theta)$.

6. Use all of the above information to sketch a graph of $f(x, y)$.