Worksheet 6 / 15 points

Name: Section: 2 4 (circle one)

1. Sketch a graph of the function $z = f(x, y) = x^2 + y^2 + 1$ and in the xy-plane, sketch the level curves $f(x, y) = 5$ and $f(x, y) = 10$.

2. For the function $f(x, y) = \sqrt{x^2 + y^2 - 1}$, determine the domain, and range. Is the domain open, closed or neither? Is the domain bounded or unbounded?

3. Determine the $\lim_{(x,y)\to(2,0)} \dfrac{\sqrt{2x-y}-2}{2x-y-4}$.

4. $\lim_{(x,y)\to(0,0)} \dfrac{x^4}{x^4+y^2}$

5. $\lim_{(x,y)\to(-1,0)} \dfrac{\sin(y)x+\sin(y)}{yx^2-y}$