Math 2551 Worksheet Section 14.2

1. Let $f(x, y) = \dfrac{x - 2y}{x^3 - 8y^3}$. Find $\lim\limits_{(x,y) \to (2,1)} f(x, y)$ or show it does not exist.

2. Let $f(x, y) = \dfrac{\sqrt{2x - y} - 2}{2x - y - 4}$. Find $\lim\limits_{(x,y) \to (2,0)} f(x, y)$ or show it does not exist.

3. At what points (x, y) in the plane is $f(x, y) = \cos\left(\dfrac{1}{xy}\right)$ continuous?

4. At what points (x, y, z) is $h(x, y, z) = \dfrac{1}{1 - \ln\left(x^2 + y^2 + z^2\right)}$ continuous?