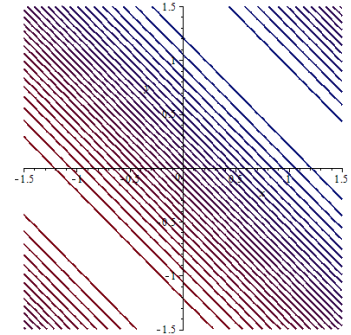
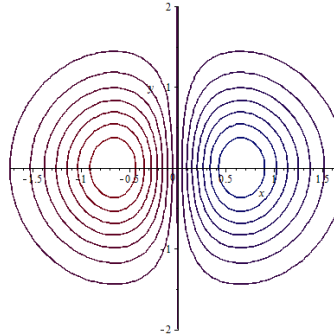
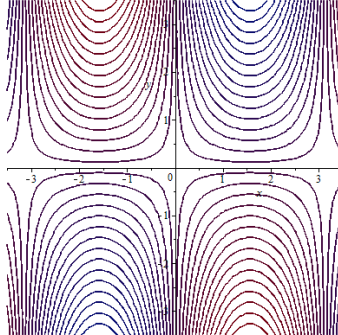
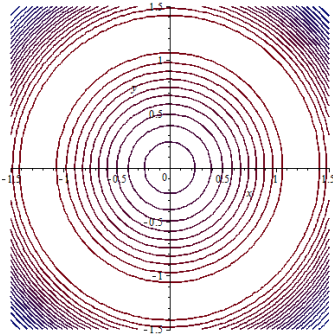
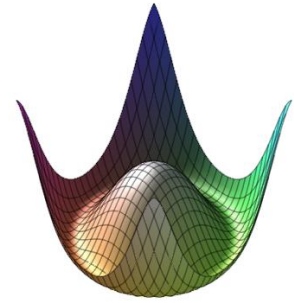
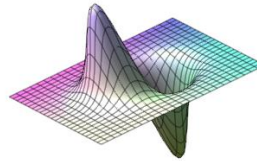
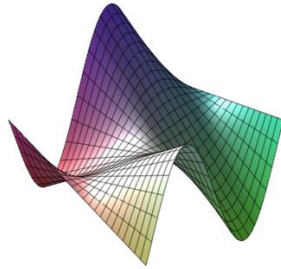
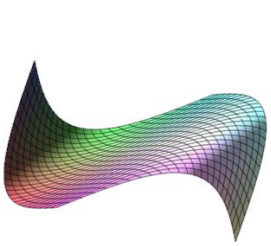


Quiz 6

1. Match the following surfaces to the contour plots below.



2. Find the following limits if they exist. If they don't exist, say so and explain.

a. $\lim_{(x,y) \rightarrow (1,2)} \frac{x^2 y^3}{x-y}$

b. $\lim_{(x,y) \rightarrow (0,0)} \frac{x^2 - y^2}{x^2 + y^2}$

c. $\lim_{(x,y) \rightarrow (0,0)} \frac{x^2 y}{x^4 + y^2}$

d. $\lim_{(x,y) \rightarrow (0,0)} \frac{xy^2 - yx^2}{x-y}$

3. Suppose $f(x, y, z) = 3x \cdot z \cdot \sin^2(2x + y^2)$

a. Find $\frac{\partial}{\partial x} = f_x(x, y)$

b. Find $\frac{\partial}{\partial y} = f_y(x, y)$

c. Find $\frac{\partial}{\partial z} = f_z(x, y)$