Name: _____ Sort #: _____

Worksheet 7

Multivariable Functions & Partial Derivatives MATH 2210, Fall 2018

1. Sketch the level curves of the function $z = x + y$ for the values $c = -1, 0, 2, 4$.

2. Given $f(x, y, z) = \dfrac{2xz}{x + y}$, find $\dfrac{\partial f}{\partial x}$, $\dfrac{\partial f}{\partial y}$, and $\dfrac{\partial f}{\partial z}$.

3. Find the four second partial derivatives of $f(x, y) = 2xe^y - 3ye^{-x}$.

4. Show that the mixed partial derivaitves f_{xyy}, f_{yxy} and f_{yyx} are equal for the function

$$f(x, y, z) = x^2 - 3xy + 4yz + z^3$$