Name _____

Homework 7
Section 14.3

1. (5) Find the equation of the plane which is tangent to the graph of
$$f(x, y) = yx^3 - xy^2 + xy + 9y$$
at the point $(2, 3)$. Write your answer in the form $z = ax + by + c$.

2. (5) Find an equation for the tangent plane to the graph of $g(x, y) = 10x\sqrt{y} - \sin(4x + y)$ at $(-1, 4)$. Write your answer in the form $z = ax + by + c$.

3. (5) Determine the best linear approximation of $f(x, y) = x^2y^5 + 7x + 4x\ln(2 - y)$ near $(3, 1)$.

4. (5) Find the differential of the function $f(w, x, y, z) = wx + wyz + xz^3 - \frac{y^2}{z} + 6w$ at the point $(5, 3, -4, 2)$.