Quiz 6 Math 232, Calculus III, Spring 2018 Name:

Show all your work to receive full credit.

1. Let $f(x, y) = x^4y - 2x^3y^2$. Find all second partial derivatives.

2. Find $\dfrac{\partial z}{\partial y}$ where $2x^3 - 3y^2 + 4yz^4 = 10$.

3. Let $f(x, y) = \dfrac{x}{y^2}$. Find the tangent plane on f at the point $P(-4, 2)$

4. Bonus: Let $f(x, y) = e^{x^2+y} \sin(xy)$. Find f_x and f_y.