QUIZ 9

Name _____

1. Suppose the production of a firm is modeled by $P(k,l) = 16k^{\frac{1}{3}}l^{\frac{2}{3}}$, with k defined as capital in millions of dollars and l defined as labor in thousands of workers. Suppose $l = 3$ and $k = 4$, the labor force is incresing at the rate of 80 workers per year and capital is decreasing at the rate of \$200,000 per year. Determine the rate of change of production

2. Find the maximum rate of change for the function $f(x,y,z) = 4x^2yz^3$ at the point $(1,2,1)$.

3. Find and classify all the critical points for the function $f(x,y) = 4xy - x^4 - y^4 + 4$