

Math 105 Assignment 6
Due the week of February 28

1. (5 points) Find an equation for a plane P which is parallel to $3x + y + z = 9$, and contains the point $(1, 5, 6)$.

2.a (3 points) Let $f(x, y) = 100x^{\frac{1}{3}}y^{\frac{2}{3}}$, and let C be a positive constant. Express the level curve $f(x, y) = C$ as the graph of a function $y = g(x)$.

2.b (2 points) Describe the level curve $f(x, y) = C$ when $C = 0$, and when $C < 0$.

3. (5 points) Determine whether or not the following limit exists:

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