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 $f(x, y) = 100x^{\frac{1}{4}}y^{\frac{2}{4}}$, 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:

\[
\lim_{(x,y) \to (0,0)} \frac{x^2 + y}{x^2 - y}.
\]