

HOMEWORK # 19, written assignment

Let $f(x, y) = x^{1/3}y^{2/3}$.

- (a) Find $f_x(0, 0)$ and $f_y(0, 0)$. Hint: Both of the partial derivatives exist, but you will probably have to use the definition of partial derivatives to compute them.
- (b) What is the limit of $f_x(x, y)$ as $(x, y) \rightarrow 0$ along the line $y = x$? Is f_x continuous at $(0, 0)$?