Homework 8 of Introduction to Analysis(II)

AM15 黃琦翔 111652028

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1. $f_x(0,0) = \lim_{x\to 0} \frac{|f(x,0)-f(0)|}{|x|} = \lim_{x\to 0} \frac{|x\cdot 0(x^2-0^2)/(x^2+0^2)|}{|x|} = 0$ exists. Also, we can esaily get that $f_y(0,0) = 0$.

   Then, $f_{xy}(0,0) = \frac{\partial f_x}{\partial y}(0,0) = \frac{\partial}{\partial y}$