MTH101A
QUIZ-2, 23-11-2020, 4:20-4:30PM

(2) Let $f(x, y) = \dfrac{1}{2}(||x| - |y|| - |x| - |y|) - xy$.

    (a) Does the directional derivative of f exist at $(0, 0)$ in the direction $(\frac{3}{5}, \frac{4}{5})$? Justify your answer.

    (b) Is f differentiable at $(0, 0)$? Justify your answer.   [5]