

Problem 2 $f(x, y) = 4x^2 + y^2 - xy - 13x$

(1) $\frac{\partial f}{\partial x} = 8x - y - 13$

(2) $\frac{\partial f}{\partial y} = 2y - x$

(2) let $\frac{\partial f}{\partial x} = 0 \quad \frac{\partial f}{\partial y} = 0$

$$\left\{ \begin{array}{l} 8x - y - 13 = 0 \\ 2y - x = 0 \end{array} \right.$$

$$\left\{ \begin{array}{l} x = \frac{26}{15} \\ y = \frac{13}{15} \end{array} \right.$$

So, $(\frac{26}{15}, \frac{13}{15})$ is the min ~~max~~ point.