

$$f(x, y) = \frac{3}{2}y^2 + x^2 + y - x + 3 \rightarrow \text{extr}$$

$$\textcircled{1} \text{ HYL: } \begin{cases} f'_x = 2x - 1 = 0 \\ f'_y = 3y + 1 = 0 \end{cases} \Rightarrow (x, y) = \left(\frac{1}{2}, -\frac{1}{3}\right)$$

$$\textcircled{2} \text{ AY: } \begin{cases} f''_{xx} = 2 \\ f''_{yy} = 3 \\ f''_{xy} = 0 \end{cases} \Rightarrow f'' = \begin{pmatrix} 2 & 0 \\ 0 & 3 \end{pmatrix} \quad \begin{matrix} \Delta_1 > 0 \\ \Delta_2 > 0 \end{matrix} \Rightarrow \text{lok. min. exp.} \\ \Rightarrow \text{Bscr. AY} \Rightarrow (x^*, y^*) = \left(\frac{1}{2}, -\frac{1}{3}\right) - \text{global. loc. min.}$$

$$\textcircled{3} \begin{matrix} \Delta_1 \geq 0 \\ \Delta_2 \geq 0 \end{matrix} \Rightarrow f'' - \text{неогр. exp.} \Rightarrow f \text{ неогр. exp. на } \mathbb{R}^2 \text{ (огр. мин.)} \\ \Rightarrow \exists \text{ abs. min.} \\ \Rightarrow \text{Итак: } \left(\frac{1}{2}, -\frac{1}{3}\right) - \text{global. abs. min.}$$