

Tutorial 5

1. 考虑问题

$$\begin{aligned} \min_{x_1, x_2 \in \mathbb{R}} & \left(x_1 - \frac{9}{4}\right)^2 + (x_2 - 2)^2 \\ \text{s. t.} & \quad -x_1^2 + x_2 > 0 \\ & \quad x_1 + x_2 \leq 6 \\ & \quad x_1 > 0, x_2 > 0 \end{aligned}$$

写出 KKT 条件，并验证点 $x^* = \begin{pmatrix} \frac{3}{2} \\ \frac{9}{4} \end{pmatrix}$ 满足这些条件