

| Let $\alpha \in \mathbb{R}$ and show that the expression:

$$x_1^2 - x_2^2 = \alpha$$

is a level set for the function $h : \mathbb{R}^2 \rightarrow \mathbb{R}$ defined by:

$$e^{x_1^2} e^{-x_2^2} + x_1^4 - 2x_1^2 x_2^2 + x_2^4.$$