2.

$$\begin{cases} f(x,y) = x^2+y^2+z^2 \\ \varphi(x,y,z) = x^2-yz-1 \end{cases}$$ (distância ao quadrado)

$$\begin{cases} \partial_x f = \lambda \partial_x \varphi \\ \partial_y f = \lambda \partial_y \varphi \\ \partial_z f = \lambda \partial_z \varphi \end{cases}$$

$\therefore$ $$\begin{cases} 2x = \lambda\, 2x \\ 2y = \lambda(-z) \\ 2z = \lambda(-y) \\ x^2-yz=1 \end{cases} \implies \begin{array}{l} x=\lambda x \\ x(1-\lambda)=0 \\ \underline{\underline{x=0}} \text{ ou } \underline{\underline{\lambda=1}} \end{array}$$

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Seja $\underline{\underline{x=0}}$.

$$\begin{cases} 2y=-\lambda z \longrightarrow -\lambda = \frac{2y}{z} \\ 2z=-\lambda y \longrightarrow -\lambda = \frac{2z}{y} \\ -yz=1 \implies y\neq 0,\ z\neq 0 \end{cases} \Bigg\rangle\ \frac{\cancel{2}y}{z} = \frac{\cancel{2}z}{y}$$

$$y^2=z^2$$

$$\underline{\underline{y=\pm z}}$$

Se $y=z$: $-yy=1$

$-y^2=1 \quad \therefore y^2=-1 \quad \therefore \nexists y$

Se $y=-z$: $-y(-y)=1 \quad \therefore \quad y^2=1 \quad \therefore \quad y=\pm 1$

$$\therefore \quad (x,y,z) = \begin{cases} (0,1,-1) \\ (0,-1,1) \end{cases}$$