Q 5.4   Gradient descent pseudo code.

initialize x_1, a_2 & α

while not converge {

$$d = -\nabla_x L = -\left[\frac{\partial L}{\partial x_1} \quad \frac{\partial L}{\partial x_2} \right]$$

$$\begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} x_1 \\ a_2 \end{pmatrix} + \alpha\, d^T$$

}