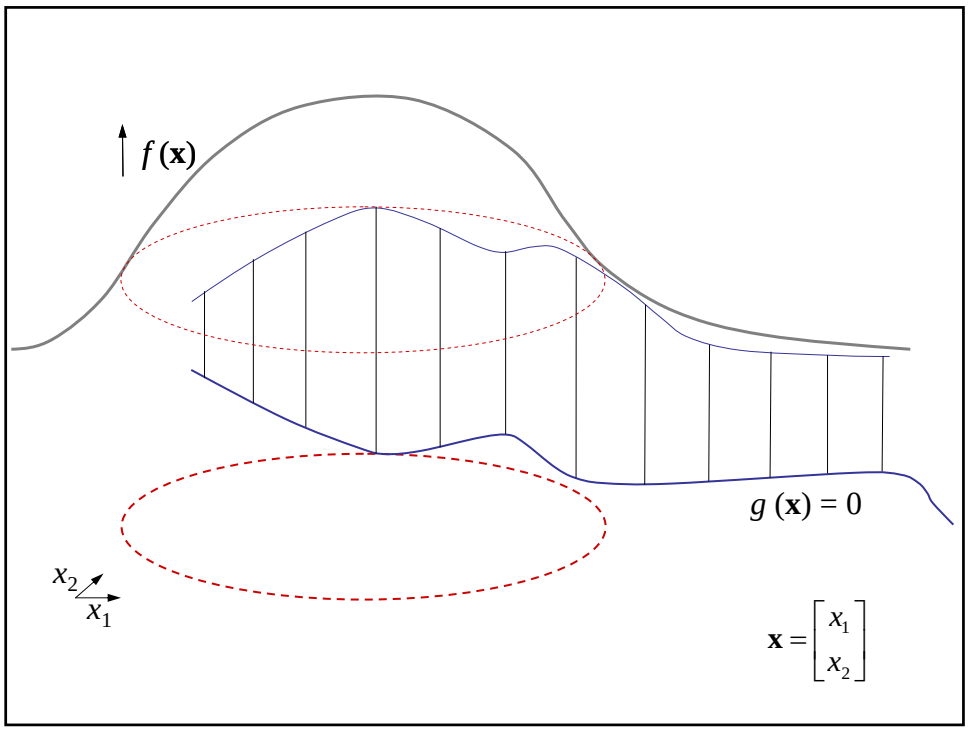
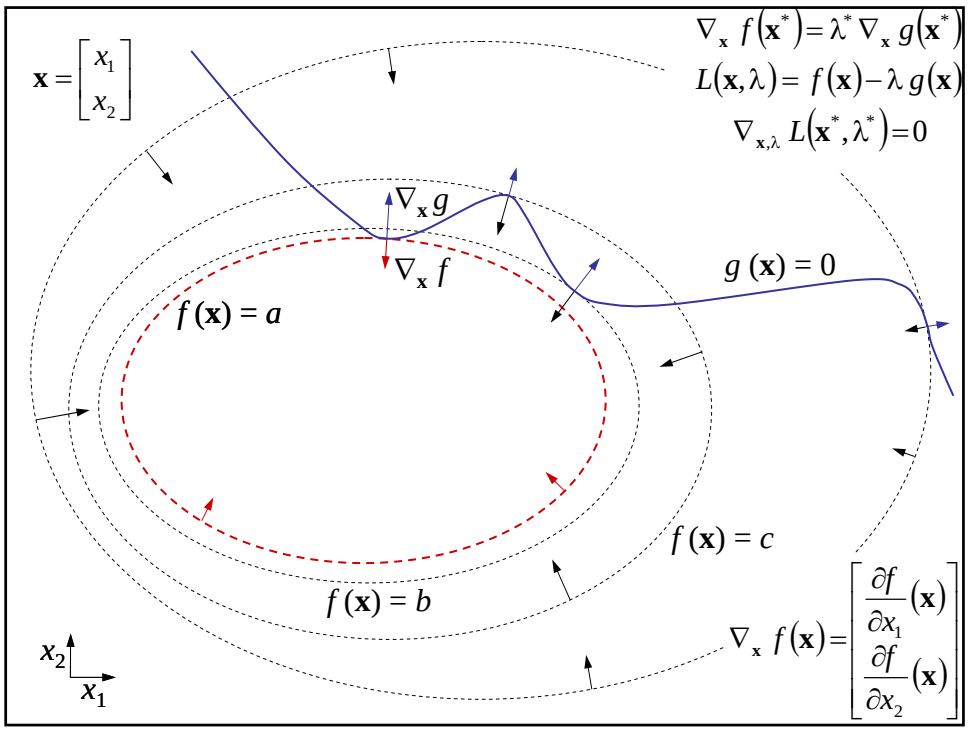

$f(\mathbf{x})$
$g(\mathbf{x}) = 0$
x_2
x_1
$\mathbf{x} = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$


$\nabla_{\mathbf{x}} f(\mathbf{x}^*) = \lambda^* \nabla_{\mathbf{x}} g(\mathbf{x}^*)$
$L(\mathbf{x},\lambda) = f(\mathbf{x}) - \lambda g(\mathbf{x})$
$\nabla_{\mathbf{x},\lambda} L(\mathbf{x}^*,\lambda^*) = 0$
$\mathbf{x} = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$
$\nabla_{\mathbf{x}} g$
$\nabla_{\mathbf{x}} f$
$g(\mathbf{x}) = 0$
$f(\mathbf{x}) = a$
$f(\mathbf{x}) = c$
$f(\mathbf{x}) = b$
$\nabla_{\mathbf{x}} f(\mathbf{x}) = \begin{bmatrix} \frac{\partial f}{\partial x_1}(\mathbf{x}) \\ \frac{\partial f}{\partial x_2}(\mathbf{x}) \end{bmatrix}$
x_2
x_1