$f : \mathbb{R}^m \to \mathbb{R}^n$
$J \in R^{n \times m}$
$J_{i,j} = \frac{\partial f(x)_i}{\partial x_j}$
$H(f)(x)_{i,j} = \frac{\partial^2}{\partial x_i \partial x_j} f(x)$
$H_{i,j} = H_{j,i}$