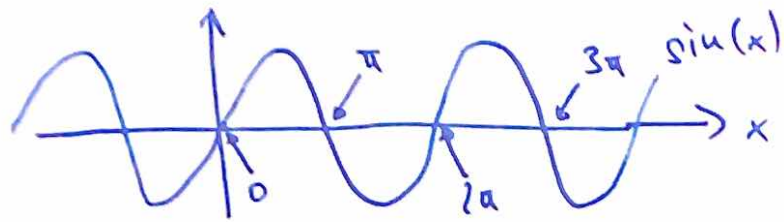


$$x^2 = x \quad \Leftrightarrow \quad x \in \{0, 1\}$$

1/2

$$\sin(\pi x) = 0 \quad \Leftrightarrow \quad x \in \mathbb{Z}$$



$$x^T \Sigma x = \sum_{i=1}^n \sum_{j=1}^n \sigma_{ij} x_i x_j$$

Assume that  $n=3$ :

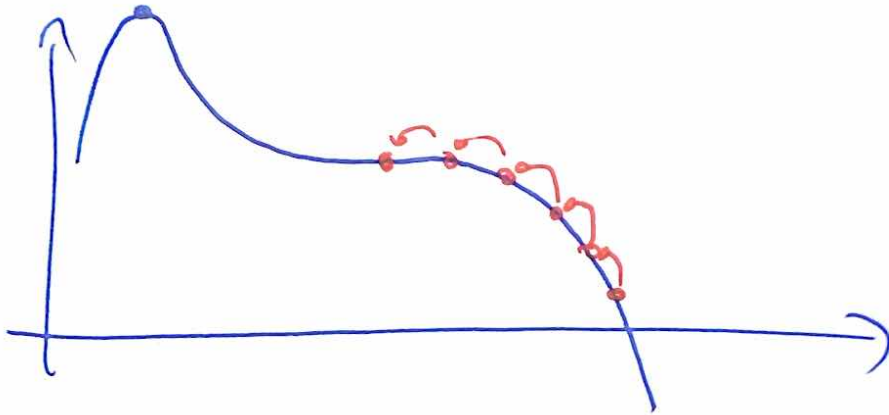
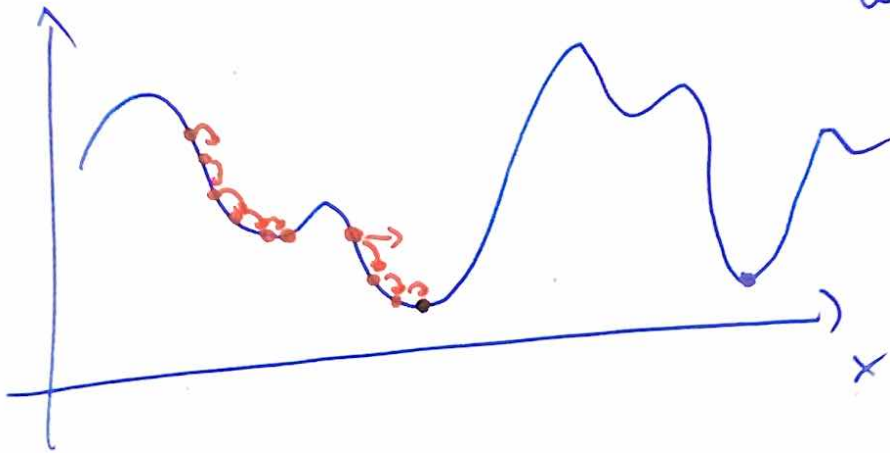
$$\sigma_{11} \underbrace{x_1 x_1}_{x_1^2} + 2\sigma_{12} x_1 x_2 + 2\sigma_{13} x_1 x_3$$

$$+ \sigma_{22} x_2 x_2 + 2\sigma_{23} x_2 x_3 + \sigma_{33} x_3 x_3$$

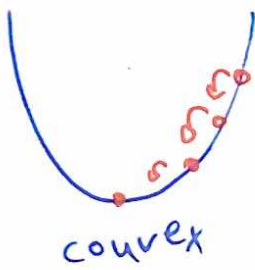
$$\max_{\lambda} \lambda \cdot \mu^T x - \underbrace{(1-\lambda)}_{\frac{1}{n}} \cdot x^T \Sigma x$$

for  $\lambda \in [0, 1]$

mini-se! 2/2

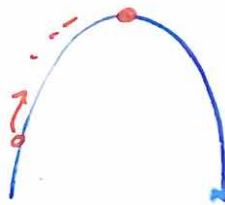


mini-se



convex

maxi-se



concave