

$$\begin{aligned}
 \text{min.} \quad & 4x_1^2 + 2x_2^2 + x_3^2 \\
 \text{s.t.} \quad & 6x_1 + 2x_2 + 4x_3 \geq 12 \\
 & x_1 - 4x_2 + 7x_3 \leq 10
 \end{aligned}$$

the deterministic optimum is:

$$x^* = [0.7136, 0.5628, 1.648]$$

$$f^* = 5.387$$

- 1) Find σ_c assuming normal distributions with $\sigma_{x_1} = \sigma_{x_2} = \sigma_{x_3} = 0.1$
- 2) Assuming you want an overall reliability of 99.5956%, what k value should you use? (icdf or norminv may be helpful).
- 3) If you have time: reoptimize