Exercises Set 1

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Abstract

Only the questions with a * are compulsory (but do all of them!).

1 Optimization

1.1 One dimension

Let's consider $f(x) = x^2 - x + 3$. We are interested in finding the minimum of this function; i.e. we want to find $x^* \in \mathbb{R}$ such that $f(x^*)$ is the smallest possible, mathematically:

$$\forall x \in \mathbb{R}, f(x) \geq f(x^*)$$