# Exercise 9

**Task 1**

Let $f, g \in \mathbb{R}[x]$ with

$$f(x) = x^4 + x^3 - x - 1,$$
$$g(x) = 4x^3 + 3x^2 - 1.$$

Compute the Sturm sequence $[f, g]$.

**Task 2**

Compute the number of zeros of $f(x) = x^4 - x^2 - 1$ in the interval $(-2, 2)$ using the Theorem of Sturm and Tarski.