

## Numerical root finding project

For this first programming project, we'll explore the polynomial

$$f(x) = x^8 - x^7 - 3x^6 + 5x^4 + 3x^3 - 2x^2 - 3x - 1.$$

Note that  $f$  has two positive roots. You should verify this with a graph. Use Python to find good numerical approximations to both these roots.

SciPy's `brentq` should work great for one root but might have problems with the other. In any event, be sure to use `brentq` to find one root and a Newton iteration to find the other.

You should work this out in a well formatted Jupyter notebook and email that to me by next Friday, February 12.