

## Math 5600 Homework # 1 (due January 23)

**Note:** For computational problems include the detailed output of your computations (always choose the option with all intermediate data). For theoretical problems show your work. No credit will be awarded if the work is not shown. Some problems (like problem 2 on this assignment) have both theoretical and computational parts, so please include both.

**1** (10 points)

Problem 4, page 64.

**2** (10 points)

Problem 11(b), page 64.

**3** (10 points)

Use Newton's method to solve Problem 22, page 76. Show your computations for  $f(x)$  and  $f'(x)$ .

**4** (10 points)

Problem 14, page 91.

**5** (10 points)

Use Müller's method to compute all the roots (including complex) of the polynomial  $f(x) = x^3 - x - 1$ .