MA1E01: Tutorial week 6

REMEMBER TO HAND BEFORE THE TUTORIAL STARTS

- Linear approximations
- Maxima and minima of functions.

Problem 1 *Using only the 4 basic operations: sum, substraction, multiplication and division of real numbers, find an approximation of $\sqrt{2}$ good to 6 decimal places.*

Problem 2 *Using only the 4 basic operations: sum, substraction, multiplication and division of real numbers, find an approximation of $\sqrt[3]{7}$ good to 6 decimal places.*

Problem 3 *Find the maxima and minima of the following function by using the first derivative criteria. Check that the result is consistent by using the second derivative criteria.*

$$f(x) = x^6 - 2x^5 + x^4 + 12$$

Problem 4 *Find the maxima and minima of the following function by using the first derivative criteria. Check that the result is consistent by using the second derivative criteria.*

$$f(x) = x^5 - \frac{20}{3}x^3 - 3$$