Lab 4

1. To investigate the relationship between yield of potatoes, y, and level of fertilizer, x, an experimenter divided a field into 5 plots of equal size and applied differing amounts of fertilizer to each. The recorded data are given in the table (in pounds).

x	1	2	3	4	5
y	22	23	25	30	28

a) According to Newton interpolation polynomial, approximate how many pounds of potatoes are expected from a plot to which 2.5 pounds of fertilizer had been applied.

b) Plot the data given in the table and the corresponding Newton interpolation polynomial.

2. Consider the function $f : [0, 6] \to \mathbb{R}$, $f(x) = e^{\sin x}$ and 13 equidistant interpolation points. Plot the interpolation points, the function f and the Newton intepolation polynomial.

3. Approximate $\sqrt{115}$ with precision $\varepsilon = 10^{-3}$, using Aitken's algorithm.