Exercise 1 — Calc. : ✗ — 7 marks

Sketch the graph of the parabola $y = x^2 - 2x - 8$.
Your sketch must show the coordinates for any points of intersection with the coordinate axes and the coordinates of the vertex.

Exercise 2 — Calc. : ✗ — 5 marks

Find the x-coordinates for the stationary points of the function

$$y = x^3 + x^2 - 5x - 6$$

And determine whether or not a stationary point is a local minimum or maximum.
Note : There is no need to calculate the value of the y coordinate in this question.

Exercise 3 — Calc. : ✗

A single unbiased die has its faces labelled 1, 1, 2, 2, 3, 4.
A player throws the die twice and adds up the numbers to get a final score.
Use a 2-dimensional grid, or any other suitable way, to solve the following:

1. Calculate the probability that the final score is 3. — 2 marks

2. Given that the 1$^{\text{st}}$ time the die was thrown it was even, calculate the probability that the final score will be even. — 3 marks

Exercise 4 — Calc. : ✗

The 3$^{\text{rd}}$ term of a sequence of numbers is 10 and the 5$^{\text{th}}$ term is 16.
Given that the sequence follows an arithmetic progression calculate:

1. The 1$^{\text{st}}$ term and the common difference. — 2 marks

2. The sum of the first 10 terms. — 3 marks

Exercise 5 — Calc. : ✗

The results of 11 students in a test are as follows:

$$3, \ 7, \ 8, \ 8, \ 10, \ 9, \ 10, \ 12, \ 14, \ 7, \ 1$$

1. Calculate the 5 number summary. — 2 marks

2. State the interquartile range. — 1 mark

3. Test for outliers and say if any numbers are outliers. — 2 marks