Functional Mathematics

Task 3 – **Probability**
Due date:

1. A coin is tossed three times, what is the probability of getting at least 'one head'?

[1 marks]

2. What is the probability of drawing an ace or a black card from a well-shuffled standard pack of playing cards?

[2 marks]

3. There are 9 marbles in bag *A* and 11 marbles in bag *B*. In bag *A*, there are 3 red marbles, 2 yellow marbles and 4 green marbles. In bag *B*, there are 2 red marbles, 4 yellow marbles and 5 purple marbles. Ted takes at random one marble from bag *A* and one marble from bag *B*. Calculate the probability that the two marbles are not the same color.

[3 marks]

4. 0.6% of the population is blue-green color-blind and roughly 1 out of 5 are left-handed. Assuming these characteristics are inherited independently, with the aid of a tree-diagram, find the probability that a person chosen at random will:
   (i) be both color-blind and left-handed
   (ii) be color-blind and not left-handed
   (iii) be color-blind or left-handed
   (iv) be neither color-blind nor left-handed

[4 marks]

Bonus Task

5. What is the probability of being dealt a three-card hand that consists of the aces of hearts, spades and clubs?

[2 marks]

6. Three dice are thrown. Find the probability of obtaining
   (i) at least two sixes
   (ii) no sixes
   (iii) different scores on all dice

[3 marks]