6A Discreet Random Variables (DRVs)

1. Three fair coins are tossed.

a) Write down all the possible outcomes when the three coins are tossed.

A random variable, X, is defined as the number of heads when the three coins are tossed.

b) Write the probability distribution of X as:

i) A table

ii) A probability mass function

2. A biased four sided dice with faces numbered 1, 2, 3 and 4 is rolled. The number on the bottom face is modelled as a random variable x.

   Given that $P(X = x) = \frac{k}{x}$

a) Find the value of k

b) Give the probability distribution of X in table form.

c) Find the Probability that:

i) $X > 2$

ii) $1 < X < 4$

iii) $X > 4$

3. The spinner below is spun until it lands on red, or has been spun 4 times in total. Find the probability distribution of the random variable S, the number of times the spinner is spun.