Exercise 3E

EXAM-STYLE QUESTION

1 Three unbiased coins are tossed one at a time and the results are noted. One possible outcome is that all the coins are heads. This is written HHH. Another is that the first two coins are heads and the last one is a tail. This is written HHT.
List the complete sample space for this random experiment.
Find the probability that:

a the number of heads is greater than the number of tails,

b at least two heads are tossed consecutively,

c heads and tails are tossed alternately.

2 Draw the sample space diagram for the random experiment 'Two tetrahedral dice, one blue and the other red, are each numbered 1 to 4. They are rolled and the result noted'.
Find the probability that:

a the number on the red dice is greater than the number on the blue dice,

b the difference between the numbers on the dice is one,

c the red dice shows an odd number and the blue dice shows an even number,

d the sum of the numbers on the dice is prime.

EXAM-STYLE QUESTION

3 A box contains three cards bearing the numbers 1, 2, 3. A second box contains four cards with the numbers 2, 3, 4, 5. A card is chosen at random from each box.

Draw the sample space diagram for the random experiment.

Find the probability that:

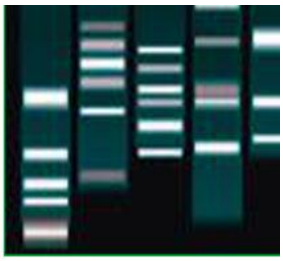
a the cards have the same number,

b the larger of the two numbers drawn is 3,

c the sum of the two numbers on the cards is less than 7,

d the product of the numbers on the cards is at least 8,

e at least one even number is chosen.



5 Tilman plays a game with a dice called 'Come and Go'. He rolls the dice. If the score is 1 he moves up one metre. If it is 2 he moves right one metre. If it is 3 he moves down one metre. If it is 4 he moves left one metre. If it is 5 or 6 he stays where he is.

Tilman rolls the dice twice. He makes two steps.

What is the probability that he is

a at the same point where he started,

b exactly 2 metres away from his starting point,

c more than 1 but less than 2 metres away from his starting point?

Probability – Problem Set #2 Name_____