Worksheet G: Independent study lesson 2

**More arrangements**

**1** Find the number of ways all 9 letters of the word FOOTSTOOL can be arranged if:

(i) there are no restrictions

(ii) the first letter is T and the last letter is S

(iii) all the Os are together.

**2** The 11 letters of the word ACCELERATED are arranged in a line.

(i) Find the number of different arrangements if there are no restrictions.

(ii) Find the number of different arrangements which start and finish with the letter C.

(iii) Find the number of different arrangements which do not have all 5 vowels   
(A, E, E, A, E) next to each other.

**3** A team of 5 men and 3 women stand in a line. Find the number of ways this can be done if none of the women stand next to each other.

**4** Numbers are made using some or all of the digits 1, 2, 3, 4.

No digit is used more than once.

(i) Show that there are 12 different, even, 3-digit numbers.

(ii) Find the total number of even numbers that can be made.

**5** In the English language, the letters A, E, I, O, U are vowels. All other letters are consonants.

Find the number of ways all 10 letters of the word ADVERTISER can be arranged so that

(i) the vowels are together and the consonants are together

(ii) the Es are not next to each other.