Worksheet D: Independent study lesson 1

**Arrangements**

**1** Find how many different numbers can be made by arranging all 8 digits of the number  
24 571 983 if

(i) there are no restrictions

(ii) the number made is an even number.

**2** Find the number of different ways the6 letters of the wordPLANED can be arranged if:

(i) the first letter is A and the last letter is E

(ii) the letters L, A and N are next to each other.

**3** Here are 7 cards.

3

4

5

2

9

7

1

These cards are placed in a line to make a 7-digit number.

How many of these 7-digit numbers:

(i) have the even digits together

(ii) have both the first number and the last number even.

**4** Find the number of arrangements that can be made using all 10 letters of the word WHITEBOARD if:

(i) there are no restrictions

(ii) there are exactly 6 letters between the T and the R.

**5** A town hall has seats for 20 people, consisting of 4 rows with 5 seats in each row. When Anya, Bob, Kim, Tomas and Lee arrive at the town hall, all the seats are empty.

(i) How many possible arrangements are there of seating Anya, Bob, Kim, Tomas and Lee if there are no restrictions?

(ii) How many possible arrangements are there of seating Anya, Bob, Kim, Tomas and Lee if Bob, Kim and Tomas sit together in the back row and the other two sit together in one of the other rows?