

1. Write a program using a two dimensional array with 3 rows and 4 columns. Read the values into the array. Display the array on screen. Calculate and display the row totals and the column totals.

Sample output

```

Array:
1      2      3      4
5      6      7      8
9     10     11     12

Total for Row 1: 10
Total for Row 2: 26
Total for Row 3: 42

Total for Column 1: 15
Total for Column 2: 18
Total for Column 3: 21
Total for Column 4: 24

```

2. A plane has 14 rows of seats with 6 seats in each row. Write a program that will allow the user to book seats on the plane. The user should be able to book and cancel (unbook) seats, find out how many seats are currently free, how many seats are currently booked, and reset the seats (unbook all). The user will also want to see the current bookings.

```

Flight booking system
1. Book a seat
2. Cancel a seat
3. Show current booking status
4. Reset
0. Quit
Enter option:

```

3. A magic square is an arrangement of the numbers from 1 to n^2 in an $n \times n$ matrix, with each number occurring exactly once, and such that the sum of the entries of any row, any column, or any main diagonal is the same.

This is an example of a **3x3** magic square

8	1	6
3	5	7
4	9	2

Write a program that will allow the user to test if values read in to a 3 x 3 matrix satisfy the conditions of a magic square.