1. Write a C program that reads two real numbers (from keyboard) representing the x and y coordinates of a point in the Cartesian plane. It then checks whether the point lies inside, outside or on a circle of radius 5 with centre at the origin. Finally, it prints appropriate message too. [6]

   (Example: Typical input: 2.5 3.0
   Typical output: The point lies inside the circle
   Typical input: 1.9 4.8
   Typical output: The point lies outside the circle
   Typical input: 3.0 4.0
   Typical output: The point lies on the circle)

2. Write a C program that reads three integers (from the keyboard) representing a day of January of the current year as day, month, year. Then it checks the validity of the date entered. Next it calculates and prints out the date of the previous day. [9]

   (Example: Typical input: 28 1 2016
   Typical output: Date preceding 28-1-2016 is 27-1-2016)

3. Write a C program that accepts a positive integer (from the keyboard). If the input is invalid, it stops after printing the message **Invalid input**. For a valid input, it then computes and prints out the sum
   $$1 \cdot n + 2 \cdot (n - 1) + 3 \cdot (n - 2) + \cdots\cdots + (n - 1) \cdot 2 + n \cdot 1$$ [7]

4. Write a C program that accepts a three digit positive integer from the keyboard. If the input is invalid, it stops after printing the message **Invalid input**. For a valid input, it then checks whether the sum of the digits is equal to the product of the digits. Finally, it prints appropriate message too. [8]

   (Example: Typical input: 123
   Typical output: The sum of the digits is equal to the product of the digits
   Typical input: 121
   Typical output: The sum of the digits is NOT equal to the product of the digits)