

1. If a four-digit number is input through the keyboard, write a program to obtain the sum of the first and last digit of this number.
2. In a town, the percentage of men is 52. The percentage of total literacy is 48. If total percentage of literate men is 35 of the total population, write a program to find the total number of illiterate men and women if the population of the town is 80,000.
3. If the total selling price of 15 items and the total profit earned on them is input through the keyboard, write a program to find the cost price of one item.
4. If a five-digit number is input through the keyboard, write a program to print a new number by adding one to each of its digits. For example if the number that is input is 12391 then the output should be displayed as 23402.
5. If cost price and selling price of an item is input through the keyboard, write a program to determine whether the seller has made profit or incurred loss. Also determine how much profit he made or loss he incurred.
6. A five-digit number is entered through the keyboard. Write a program to obtain the reversed number and to determine whether the original and reversed numbers are equal or not.
7. Write a program to check whether a triangle is valid or not, when the three angles of the triangle are entered through the keyboard. A triangle is valid if the sum of all the three angles is equal to 180 degrees.
8. Given the length and breadth of a rectangle, write a program to find whether the area of the rectangle is greater than its perimeter. For example, the area of the rectangle with length =5 and breadth = 4 is greater than its perimeter.
9. Given three points (x1, y1), (x2, y2) and (x3, y3), write a program to check if all the three points fall on one straight line.
10. Given the coordinates (x, y) of a center of a circle and its radius, write a program which will determine whether a given point lies inside the circle, on the circle or outside the circle.

Printing Calendar for a given Year

- Develop functional decomposition and write a C++ program to print the calendar of an year, given the day of the week of January first of the year.
- Assumptions:
 - Input is year, an integer > 1700
 - Input the day of Jan first, an integer 0 to 6 for Sunday through Saturday.

Average

- In a class there are n number of students – each studying m subjects. Marks of each of the student in each of the subjects are to be read and class average in each subject and the average of total marks in all subjects to be computed.

- There is no need to store the values – No need to use arrays – Assume that m is 3 and use sentinel -100 to end inputs. Output marks in each subject and total obtained by each student in a row and subject average and class average in the last row.
- Write a function to take a floating point number as input and returns the same number rounded to k decimal places. Do not use any system defined functions. If input is 17.24578, and k = 2, the output is 17.25 and 345.2034 is rounded as 345.20.
- Use functions to write a program to implement integer calculator with functions add, subtract, multiply, quotient, modulus, exponent. Provide proper user interface.