**GEOMETRIC PROGRAMS**

Program 1 :

To calculate area and circumference we must know the radius of circle. The program will prompt user to enter the radius and based on the input it would calculate the values. To make it simpler we have taken standard PI value as 3.14 (constant) in the program. Other details are mentioned as comments in the below example program.

#include <stdio.h>

int main()

{

int circle\_radius;

float PI\_VALUE=3.14, circle\_area, circle\_circumf;

//Ask user to enter the radius of circle

printf("\nEnter radius of circle: ");

//Storing the user input into variable circle\_radius

scanf("%d",&circle\_radius);

//Calculate and display Area

circle\_area = PI\_VALUE \* circle\_radius \* circle\_radius;

printf("\nArea of circle is: %f",circle\_area);

//Caluclate and display Circumference

circle\_circumf = 2 \* PI\_VALUE \* circle\_radius;

printf("\nCircumference of circle is: %f",circle\_circumf);

return(0);

}

Output:

Enter radius of circle: 2

Area of circle is: 12.560000

Circumference of circle is: 12.560000

Program 2 :

In order to calculate the area of equilateral triangle, we must know the side of the triangle. This program would prompt user to enter the side of the equilateral triangle and based on the value, it would calculate the area.

**Formula used in the program**:  
Area = sqrt(3)/4 \* side \* side  
Here sqrt refers the “square root”, this is a predefined function of “math.h” header file. In order to use this function, we have included the “math.h” header file in the program.

#include<stdio.h>

#include<math.h>

int main()

{

int triangle\_side;

float triangle\_area, temp\_variable;

//Ask user to input the length of the side

printf("\nEnter the Side of the triangle:");

scanf("%d",&triangle\_side);

//Caluclate and display area of Equilateral Triangle

temp\_variable = sqrt(3) / 4 ;

triangle\_area = temp\_variable \* triangle\_side \* triangle\_side ;

printf("\nArea of Equilateral Triangle is: %f",triangle\_area);

return(0);

}

Output:

Enter the Side of the triangle: 2

Area of Equilateral Triangle is: 1.732051