Homework 1 Solutions

Group A

1- Formulate an algorithm and write a C++ program to calculate the area of a triangle. Given that area = 0.5 * base * height

```
#include <iostream>
#include <conio.h>
int main()
{
 float b, h;
 float area;
 cout<<"\n Enter base length in cm: ";
 cin>> b;
 cout<<"\n Enter height length in cm: ";
 cin>> h;
 area = 0.5 * b * h;
 cout<<"\n triangle area= "<<area<<" cm2" ;
 getch();
 return 0;
}
```

2- Formulate an algorithm and write a C++ program to calculate and printout the area and perimeter of a circle given the radius.

```
#include <iostream>
#define pi 3.1416
int main()
{
 float r, area, perimeter;
 cout<<"\n Enter circle radius in cm: ";
 cin>> r;
  area = pi * r * r;
  perimeter = 2 * pi * r;
 cout<<"\n circle area= "<<area<<" cm2" ;
 cout<<"\n circle perimeter= "<<perimeter<<" cm2" ;
 return 0;
}
```

3- Formulate an algorithm and write a C++ program to calculate and print out the area of a square given its side length.

```
#include <iostream>
#include <conio.h>
int main()
{
 float sl;
 float area;
 cout<<"\n Enter side length in cm: ";
 cin>> sl;
  area = sl*sl;
 cout<<"\n square area= "<<area<<" cm2" ;
 getch();
 return 0;
}
```

4- Formulate an algorithm and write a C++ program to transform a given angle measure in degrees to radians given that:

rad = deg * 3.14 / 180.

```
#include <iostream>
#include <conio.h>
#define pi 3.1416
int main()
{
 float deg,rad;
 cout<<"\n Enter angle measure in degrees: ";
 cin>> deg;
  rad = deg * pi /180;
 cout<<"\n angle measure in radians = "<<rad;
 getch();
 return 0;
}
```

5- Formulate an algorithm and write a C++ program to transform a given degree of temperature from Celsius to Fahrenheit given that: F=5/9C+32.

```
#include <iostream>
#include <conio.h>
int main()
{
 float c,f;
 cout<<"\n Enter Temperature in degrees Celsius: ";
 cin>> c;
  f = 5*c /9 + 32;
 cout<<"\n Temperature in Faherenheit = "<<f;
 getch();
 return 0;
}
```

6- Formulate an algorithm and write a C++ program to input three integers and calculate their average.

```
#include <iostream>
#include <conio.h>
int main()
{
 int a,b,c;
 float avg;
 cout<<"\n Enter 1st integer: ";
 cin>> a;
 cout<<"\n Enter 2nd integer: ";
 cin>> b;
 cout<<"\n Enter 3rd integer: ";
 cin>> c;
 avg = (a+b+c)/3.0;
 cout<<"\n average of integers =  "<<avg;
 getch();
 return 0;
}
```