Homework 3 Solutions
Group A

1. Write a C++ program to calculate and print the sum of odd integers from 3 to 19.

2. Write a C++ program to printout multiples of 5 less than 80.

3. Write a C++ program to calculate and print the average of even integers from 6 to 100.

4. Write a C++ program to calculate and print the sum of the series:

   7+11+15+19+ … + 35.

5. Write a C++ program to calculate and print the sum of a student's scores in 15 subjects.

6. Write a C++ program to calculate and print the mean of numbers from 1 to 100.

7. Write a C++ program to calculate and print the average salary for 30 employees salaries.

8. Write a C++ program to input 10 integer numbers and find the maximum number.

9. Write a C++ program to input 20 integer numbers and find the minimum number.

10. Write a C++ program to input the scores of 20 students in statistics and printout success or failure for each student.

11. Write a C++ program to input the salaries of 20 employees and find the number of employees whose salaries are less than 1500.

12. Write a C++ program to printout the multiplication table 1 – 12.

13. Write a C++ program to calculate the value of the polynomial:

$$y = u + \frac{u^2}{2} + \frac{u^3}{3} + \frac{u^4}{4} + \frac{u^5}{5}$$

Solution

1-
```cpp
#include<iostream>
#include<conio.h>
int main( )
{
  int i, sum=0;
  i=3;
  while(i <= 19)
   {
      cout<< i;
      sum += i;
      i += 2;
   }
cout "\n the sum =  "<< sum;
getch();
return 0;
}
```

2-
```cpp
#include<iostream>
#include<conio.h>
int main( )
{
  int i;
  i=5;
  while(i <= 80)
   {
      cout<< i<<endl;
      i += 5;
   }
getch();
return 0;
}
```

3-
```cpp
#include <iostream>
#include <conio.h>
int main ( )
{
  int    i , n=0;
  float  avg , sum = 0 ;
  for (i = 6 ; i <= 100 ; i+=2)
   {   sum+=i;
       n++;       }
  avg = sum / n ;
cout<< " \n the sum is "<< sum ;
cout<<" \n the average is "<< avg ) ;
getch();
return 0;
}
```

4-
```cpp
#include <iostream>
#include <conio.h>
int main( )
{
  int  i ,sum=0;
  for(i = 7 ; i <= 35 ; i+=4)
   {
       cout<<i<<" + ";
       sum+=i;
   }
   cout<<"\b\b = "<<sum;
   getch();
   return 0;
}
```

5-
```cpp
#include<iostream>
#include<conio.h>
int main( )
{
  int  i ,n=15;
  float  score,sum=0.0;
  for(i = 1 ; i <= n ; i++)
   {
       cout<<"\n Student's score in subject"<<i<<" : ";
       cin>>score;
       sum+= score;
   }
   cout<<" \n the sum of the scores= "<<sum;
 getch();
 return 0;
}
```

6-
```cpp
#include <iostream>
#include <conio.h>
int main( )
{
  int  i;
  float  avg,sum=0.0;
  for(i = 1 ; i <= 100 ; i++)
       sum+=i;
avg = sum / 100.0;
cout<<" \n average of numbers 1:100 = "<<avg;
getch();
return 0;
}
```

7-
```cpp
#include <iostream>
#include <conio.h>
/* calculate the average of n employees' salaries  */
int main ( )
{
int i , n ;
float sal , avg , sum = 0.0 ;         /* initialize and read in a value for n */
cout<<" how many employees ? " ;
cin>>n ;
for (i = 1 ; i <= n ; i++)
  {
    cout<<" \n salary of emp<<i<<" is  ";        /* read in the salaries */
    cin>>sal ;
    sum+= sal ;
  }                        /* calculate the average and write out the answer */

avg = sum / n ;
cout<< " \n the average salary is "<< avg;
getch();
return 0;
}
```

8-
```cpp
#include<iostream>
#include<conio.h>
/* calculate the max of n numbers */
int main( )
{
int n= 10, i;
float x, max;
cout<<"\n x =  ";                  /* initialize  */
cin>>x;
max=x;
for(i=2; i<=n; i++)              /* read the next numbers */
  {
    cout<<"\n x =  ";
    cin>>x;
    if(max<x)  max=x;
  }
cout<<"\n the max number is "<<max;
getch();
return 0;
}
```

9-
```cpp
#include<iostream>
#include<conio.h>
/* calculate the min of n numbers */
int main( )
{
int n= 10, i;
float x, min;
cout<<"\n x =  ";                    /* initialize  */
cin>>x;
min=x;
for(i=2; i<=n; i++)            /* read the next numbers */
   {
     cout<<"\n x =  ";
     cin>>x;
     if(min>x)  min=x;
   }
cout<<"\n the min number is "<<min;
getch();
return 0;
}
```

10-
```cpp
#include <iostream>
#include <conio.h>
int main( )
{
  int  i ,n=20;
  float  score;
  for(i = 1 ; i <= n ; i++)
   {
      cout<<" \n Enter score of student<<i<<" :";
      cin>>score;
      if (score>=60)
          cout<<"\n successful ";
      else
          cout<<"\n failing ";
   }
getch();
return 0;
}
```

```cpp
11-  #include <iostream>
     #include <conio.h>
     int main( )
     {
       int   i ,n=200, count=0;
       float  sal;
       for(i = 1 ; i <= n ; i++)
        {
           cout<<" \n salary of emp<<i<<" is  ";        /* read in the salaries */
           cin>>sal ;
           if (sal<1500)
                 count++;
        }
     cout<<" \n employees whose salaries less than 1500$ : "<<count;
     getch();
     return 0;
     }
```

```cpp
12-  #include<iostream>
     #include<conio.h>
     int main( )
     {
     int i , j;
     for (i = 1; i <= 12; i++)
             {
                cout<<"\n\n" ;
                 for ( j = 1; j <= 12; j++)
                   {
                     cout<<i<<" * "<<j<<" = "<<i*j <<"\n" ;
                   }
          }
     getch();
     return 0;
     }
```

```cpp
13-   #include <iostream>
      #include <conio.h>
      int main ()
      {
        int i;
        float u, sum = 0;
        cout<<"\n u= ";
        cin>>u;
        for (i=1; i<=5; i++)
         {
           sum += pow(u,i)/i;
         }
        cout<<"\n sum = "<<sum;
        getch();
        return 0;
         }
```