Subject _____ Day Month year

Write a C++ program which computes the sum of all the odd numbers between 0 to 100

solution

```
#include <iostream>
using namespace std;
  int main ( )
{
 int sum=0;
For(int i=0; i<=100; i++)
 {
  iF ( i%2 !=0)
  {
    sum = sum +i;
  }
}
  Cout << "sum=" << sum;
```

Write a C++ program which reads 20 numbers and computes their average

solution

```
#include <iostream>
using namespace std;
   int main( )
{  int sum=0 , avg=0 , num=0 ;
  For(int i=1 ; i<=20 ; i++)
{ cout << "enter number" << endl;
 cin >> num;
 sum = sum + num;
}
avg = sum / 20 ;
Cout << "average=" << avg;
```

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Write a C++ program which reads unknown number of integres and counts the number of odd and even numbers Assume the input integers are all positive. use a negative number as a sentinel

solution

```
#include <iostream>
using namespace std;
  int main ( )
{
int num =0, odd count =0, even count=0;
Cout<< "enter positive number or negative num to stop"
<< endL;
while (num >=0)
{
Cout<< "enter number\n";
Cin>> num;
IF (num <0)
  break;
else if (num % 2==0)
even count ++;
else
odd count ++;
}
Cout<< "number of even num" << even count;
Cout<< "number of odd num" << odd count;
```

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Subject _____ Day Month year

write a C++ program to output

1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

solution

```
#include <iostream>
 using namespace std;
  int main ( )
{
 For (int j =1 ; i <= 5 ; i++)
 {
  For ( int j=1 ; j <= i ; j++)
  {
  cout << i ;
 }
 cout << endL;
 }
```

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```
#include <iostream>
 using namespace std;
  int main ( )
{ For (int i=1 ; i <= 10 ; i++)
{ For (int j=1 ; j <= i ; j++)
{ cout << "*" ;
} cout << endL;
}
```

Subject _____ Day Month year

Write a C++ Program which Computes the Factorial From 1 to 10

solution

```
#include <iostream>
using namespace std;
int main ()
{
For (int i = 1; i<= 10; i++)
{
int Fact = 1;
For (int j=1; j<= i; j++)
{
Fact = Fact * j;
}
cout<< "Fact of" << i << "=" << Fact ;
}
```

```
#include <iostream>
using namespace std;
int main ()
{ int x, n, r = 1;
cout<< "enter number";
cin>> x;
cout<< "enter Power";
cin>> n;
For (int i = 1; i<= n; i++)
{
```

$x^2 = x * x$

$x^3 = x * x * x$

```
r = r * x;
}
cout<< x << "raised to the
Power of" << n << "=" << r;
```

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write a C++ program to calculate $S = \frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \frac{4}{5} \ldots + \frac{99}{100}$

solution

```
#include <iostream>
using namespace std;
int main()
{
double s=0.0;
For(int i=1;i<=99;i++)
s=s+(i/i+1);
cout<<s;
}
```

write a C++ program to calculate $12^2 + 10^2 + 8^2 + 6^2 + 4^2 + 2^2$

solution

```
#include <iostream>
using namespace std;
int main()
{
int s=0;
For(int i=12;i>=2;i-=2)
{
s=s+(i*i);
}
cout<<s;
```

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Subject _____ Day Month year

write a c++ program to calculate $1^2 * 2^2 * 3^2 * 4^2 * 5^2 * 6^2$

solution

```
#include <iostream>
using namespace std;
  int main ()
{
  int R = 1;
For(int i=1; i<=6; i++)
 {
  R=R*(i*i);
}
Cout<<R;  }
```

write a program to print a table with values y, y^2, y^3 (where y takes values From 1 to 10)

solution

```
#include <iostream>
using namespace std;
  int main()
{
 cout<< "y\t" << "y^2\t" << "y^3\n";
 For(int y=1; y<=10; y++)
{
cout<<y<<'\t'<<y*y<<"\t"<<y*y*y<<"\n";
}
```

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$P = \frac{(r+h)!}{(r-h)!}$

solution

```
#include<iostream>
using namespace std;
int Fact(int);
int main()
{
  int r,h;
Float p;
cout<<" enter r";
cin>> r;
cout<<"enter h";
cin>> h;
P= Float(Fact(r+h))/Float(Fact(r-h));
cout<<"P="<<P;
}
  int Fact(int n);
{
  int result=1;
  For(int i=1;i2=n;i++)
 result = result * i;
  return result;
}
```

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b) recorder group of names alphabetically.

solution

```
#include <iostream>
using namespace std;
int main()
{
string names[5], swap;
cout<< "enter names";
For (int i=0; i<5; i++)
cin>> names[i];
For (int i=0; i<5; i++)
{
For (int j=i+1; j<5; j++)
{
iF(names[i]>names[j])
{
swap = names[i];
names[i] = names[j];
names[j] = swap
}
}
}
cout<< "names after order";
For (int i=0; i<5; i++)
cout<< names[i];
}
```

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$$y = \begin{cases} (3x-7) & \text{if } (x \neq -2) \text{ or } (x = 5) \\ \text{if } (x = -4) \text{ or } (x = 4) \end{cases}$$

Solution

```
#include <iostream>
using namespace std;
 int main()
{
 int x, result;
 cout<< "enter x";
 cin>>x;
 switch (x)
{
 case -5:
 result = 3*x-7;
 break;
 case 2:
 case 5:
 result = 5*x*x;
 break;
 case -4:
 case 4:
 result = x-4*x*x*x*x;
 break;
}
 cout<< "result=" << result;
}
```

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Program to reverse a string in C++

solution

```
#include <iostream>
#include <string>
using namespace std;
  int main ()
{
  string name;
cout<<"enter name";
cin>> name;
  For(int i = name.lenght() - 1; i >= 0; i--)
  cout<<name (i);
 }
```

Program to calculate area and circ of a triangle:

$s = \frac{a+b+c}{2}$ $\quad Area = \sqrt{s(s-a)(s-b)(s-c)}$

solution

```
#include <iostream>
using namespace std;
  int main()
{
  double a,b,c,s,area,r;
  cin>> a>> b>> c;
  s = (a+b+c)/2;
  r = s*(s-a)*(s-b)*(s-c);
 area = sqrt (r);
 cout << area;
 }
```

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بـ دالة احسب area ,circ area=w*l , circ =2*(w+l) of rectangle

solution

```
#include <iostream>
using namespace std;
double area(int, int);
double circ (int, int);

 void main ()
{
 double w,l;
cout<< "enter a (w) :";
cin>> w;
cout<< "enter a (L):";
cin>> l;
cout<< "Area =" << area (w,l) <<endl;
cout<< "circumFerence =" << circ (w,L) <<endl;
}
double area (intx , inty)
{
double area;
return area = (x * y);
}
double circ (intx, inty)
{
return 2 *(x+y);
}
```

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أصغر قيمة في array ومكانها

solution

```
#include <iostream>
using namespace std;
   int main ( )
{
  int arr [5], L , small;
For(int i=0; i <5 ; i++)
cin>> arr [i];
small = arr [0];
for (int i=0 ; i<5 ; i++)
{
if (arr [i] <small)
{
small =arr [i];
 L=i;
}
}
}
```

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بالدالة نجيب مضروب اى رقم n!

Solution:

```
#include <iostream>
using namespace std;
void Fact (int n);
  void main ()
{
  int n;
cout<< "enter n";
cin>>n;
Fact (n);
}
void Fact (int n)
{
 int F=1;
For (int i=1;i<=n;i++)
 F=F*i;
cout<<F;
}
```

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حالة $P = \frac{n!}{(n+m)!}$

solution

```
#include <iostream>
using namespace std;
int Fact (int n);
void main ()
{
int n, m;
Float P;
cout<<" enter n and m";
cin>> n >>m;
P= Fact (n) / Fact (n+m)
cout<<P;
}
int Fact (int n)
{
int F=1;
For(int i=1 ; i<=n ;i++)
F=F* i;
Return F;
}
```

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$P = \frac{n!\,(n+m)!}{(m-n)!}$ حالة

solution

```
#include <iostrem>
using name space std;
  int Fact (int n);
   void main ()
{
  int n, m;
Float P;
cout<<"entre n, m";
cin>> n >>m;
P= Fact (n) * Fact(n+m) / Fact (m-n);
cout<< P;
}
 int Fact (int n)
{
  int F=1;
For(int i=1; i<=n; i++)
  F=F*i;
 Return F;
}
```

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اعرف array حجمها 4 واطبع محتواها

solution

```
#include <iostream>
using namespace std;
int main ()
{
int num [4];
cout<<"enter 4 numbers";
For(int i=0 ;i<4;i++)
cin>> num[i];
For(int i=0;i<4;i++)
cout <<num[i];
}
```

اعرف array حجمها 4 واجب مجموعها والمتوسط

solution

```
#include <iostream>
using namespace std;
int main ()
{
int num [4],sum=0, avg=0;
For(int i=0 ;i<4; i++)
{
cin>> num[i];
sum = sum + num[i];
} avg= sum / 4;
cout<< "sum=" << sum << "average=" << avg;
```

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Subject

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ترتيب القيم تصاعدى بـ array

solution

```
#include <iostream>
using namespace std;
  int main()
{
int arr [4], swap =0;
For(int i=0; i<4; i++)
cin>>arr[i];
For(int i=0; i<4; i++)
{
For(int j =i+1; j<4; j++)
{
IF (arr[i]>arr[j])
{
swap =arr[i];
arr[i]=arr[j];
arr[j]=swap;
}
}
}
For(int i=0;i<4; i++)
Cout<<arr[i];
}
```

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subject

Day Month year

two array عدد القيم + ، مجموعهم

" " - ، ، ،

القيم الصفرية

Solution

```
#include <iostream>
 using namespace std;
  int main( )
 {
int arr [3][3],num P =0, num n=0, sum P= 0, sum n =0, num zero=0;
cout<<"enter element of array";
For (int i=0;i<3; i++)
{
 For(int j=0;j<3;j++)
{
cin>> arr [i][j];
if(arr [i][j]>0)
{ num P ++;
sum P=sum P+arr[i][j];
}
else if (arr [i][j] <0)
{ num n ++;
sum n = sum n + arr[i][j];
}
else
num zero ++;
}}
Cout<<"number of Positive"<< numP<<"sum of Positive"<< sum P
<< number of negative"<<num n <<"sum of negative"<<sum n << num zero
```

Subject _____ Day Month year

Program to calculat sum 3rd row elements and the sum of 4th colmun in array [5][5]

solution

```
#include <iostream>
using namespace std;
  int main ( )
{
int num[5][5], sum col=0, sum row=0;
For(int i=0; i<5; i++)
{
 For( int j=0; j<5; j++)
{
  cin>> num[i][j];
}
}
For (int i=0; i<5; i++)
sum row= sum row+ num[2][i];
For(int i=0; i<5; i++)
sum col = sum col + num[i][3];
Cout<<"sum of Forth Column" <<sum col;
Cout<<"sum of row" <<sum row;
}
```

third

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