Q1: write a program to calculate a sum of two numbers:

#include<iostream.h>

#include<conio.h>

void main(){int x=10;

int y=20;

int z;

z=x+y;

cout<<"the Result of z is:\n\a";

cout<<z;

getch();}

Q2:write a program to calculate a sum of two numbers entered from keyboard:

#include<iostream.h>

#include<conio.h>

void main(){int x;

int y,z;

cin>>x>>y;

z=x+y;

cout<<"the Result of z is:\n\a";

cout<<z;

getch ();}

Q3: write a C++ program to calculate the sum and average of six students degrees and print the appropriate result in the screen using (switch) statement:

#include<iostream.h>

#include<conio.h>

void main()

{int y;

float x1,x2,x3,x4,x5,x6,sum,av;

cout<<"Enter 6 integer number you want \n";

cin>>x1>>x2>>x3>>x4>>x5>>x6;

sum=x1+x2+x3+x4+x5+x6;

av=sum/6.0;

y=av/10;

cout<<sum<< "\\" << "\\" << "The Summation\n";

cout<<av<< "\\" << "\\" << "The Average\n";

switch (y)

{case 10,9:cout<<"Excellent\n";

break;

case 8:cout<<"Very good\n\a";

break;

case 7:cout<<"Good\n";

break;

case 6:cout<<"Medium\n";

break;

case 5:cout<<"Pass\n";

break;

case 4,3,2,1:cout<<"Failed\n";

break;}

getch ();}

Q4: repeat the same program in Q3 using (if) statement:

#include<iostream.h>

#include<conio.h>

void main()

{int y;

float x1,x2,x3,x4,x5,x6,sum,av;

cout<<"Enter 6 float Number you want \n";

cin>>x1>>x2>>x3>>x4>>x5>>x6;

sum=x1+x2+x3+x4+x5+x6;

av=sum/6;

y=av/10;

cout<<sum<<"--------"<<"The summation\n";

cout<<av<<"---------"<<"The Average\n";

if(av>=0&&av<50)

cout<<"Failed\n";

else if(av>=50&&av<60)

cout<<"Pass\n";

else if(av>=60&&av<70)

cout<<"Medium\n";

else if(av>=70&&av<80)

cout<<"Good\n";

else if(av>=80&&av<90)

cout<<"Very Good\n";

else if(av>=90&&av<=100)

cout<<"Excellent\n";

else

cout<<"The Average Output The Range";

getch();}

Q5: a program to calculate the difference between two numbers:

#include<iostream.h>

#include<conio.h>

void main()

{int x=100;

int y=20;

int z;

z=x-y;

cout<<"the Result of z is:\n\a";

cout<<z;

getch();}

Q6: a program to divide two numbers and add the result to another number and print the result to screen:

#include<iostream.h>

#include<conio.h>

void main()

{int x=100;

int y=20;

int z=30;

int w;

w=(x/y) + z;

cout<<"the Result of z is:\n\a";

cout<<w;

getch();}

Q7: a program to calculate the mod of two numbers and output the result:

#include<iostream.h>

#include<conio.h>

void main()

{int x=105;

int y=20;

int z;

z=x%y;

cout<<"the Result of z is:\n\a";

cout<<z;

getch();}

Q8: a program to solve the equation: z=(x\*y)/w:

#include<iostream.h>

#include<conio.h>

void main()

{int x=100;

int y=20;

int w=50;

int z;

z=(x\*y)/w;

cout<<"the Result of z is:\n\a";

cout<<z;

getch();}

Q9: a program to read ten numbers and calculate the sum and average of them using (for) statement:

#include<iostream.h>

#include<conio.h>

void main() {int i,x;

float av;

int sum=0;

cout<<"Enter 10 Integer Number\n";

for (i=1;i<=10;i++)

{cin>>x;

sum=sum+x;}

av=sum/10;

cout<<"\n The Summation="<<sum;

cout<<"\n The Average="<<av;

getch();}

Q10: write a program in C++ to print the numbers between 1 and 50 that are dividable on 3 using (while) statement:

#include<iostream.h>

#include<conio.h>

void main()

{int j=1;

while (j<=50)

{if ((j%3)==0)

cout<<j<<"\n";

j++;}

getch();}

Q11: a program in C++ to print the numbers between 1 and 10 using (Do-While) statement:

#include<iostream.h>

#include<conio.h>

void main()

{int j=1;

do

{cout<<j<<"\n";

j++;}

while (j<=10);

getch();}

Q12: aprogram in c++ language to calculate the area of a circle:

#include<iostream.h>

void main(){ const float pi = 3.14;

int r,t;

float area;

cout<<"enter the radius of the circle\n";

cin>>r;

area = pi \* r \* r;

cout<<" the area of the circle is"<<area<<"\n";

cin>>t;}

Q13: a program to calculate the area and circumference of a triangle:

#include<iosream.h>

void main (){ int base, height, a1,a2,a3;

float area, circumference;

cin>>base>>height>>a1>>a2>>a3;

area= (0.5)\* base \* height;

circumference = a1 + a2 + a3;

cout<<" the area of the triangle is"<<area<<" "<<"the circumference of the triangle is"<<circumference;}

Q14: write a c++ program to read a matrix (array) with n\*n and find the largest number in the second diagonal.

#include<iostream.h>

main(){int i,j,a[3][3],max;

for (i=0;i<3;i++)

for (j=0;j<3;j++)

cin>>a[i][j];

for (i=0;i<3;i++)

for (j=0;j<3;j++)

if (i+j==2)

{max=a[i][2-i];

for (i=0;i<3;i++)

for (j=0;j<3;j++)

{

if (a[i][2-i]>max)

max=a[i][2-i]; }}

cout<<"maximum number in the second diagonal is"<<max; }

Q15: a program in C++ to calculate the area and circumference of a rectangle:

#include <iostream.h>

main(){

int length, width;

cout<<"length = "; cin>>length;

cout<<"width = "; cin>>width;

cout<<"perimeter = "<<2\*(length+width)<<"\n";

cout<<"area = "<<length\*width;}

Q16: a program to read four degrees and calculate the sum and average of them, and print it:

#include <iostream.h>

main(){

int m1, m2, m3, m4;

cout<<"Enter marks \n";

cin>>m1>>m2>>m3>>m4;

cout<<"avg = "<< (m1+m2+m3+m4)/4;}

Q17: a program to read a Fahrenheit degree and convert it to Celsius degree using the conversion equation: c=(f-32)\*5/9

#include <iostream.h>

main(){ float f;

cout<<"f = ";

cin>>f;

cout<<"c = "<< (f-32)\*5.0/9.0;}

Q18: write a program to read a Celsius degree and convert it to Fahrenheit degree temperature using the equation: f=c\*9/5+32:

#include <iostream.h>

main(){ float c;

cout<<"c = "; cin>>c;

cout<<"f = "<< c\*9.0/5.0+32;}

Q19: a program to calculate a and b from the equations:  و 

#include <iostream.h>

#include <math.h>

main(){ float w,x,y,z;

cout<<"Enter w,x,y,z\n";

cin>>w>>x>>y>>z;

cout<<"a = \n"<< ((5+x)/z) + (y/2.7\*w);

cout<<"b = "<< (4.5\*pow(x+2.3\*y,2)) / (z+w);}

Q20: write a program to read a real number and print (positive) when it is greater than zero and negative otherwise:

#include <iostream.h>

main(){ float n;

cout<<"n = ";

cin>>n;

if(n>=0) cout<<"Positive";

else cout<<"Negative";}

Q21: a program to read two numbers and exchange them if the first one is greater than the second one:

#include <iostream.h>

main(){ int a, b, t;

cout<<"a = ";

cin>>a;

cout<<"b = ";

cin>>b;

if(a>b) {

t=a;

a=b;

b=t;}

cout<<a<<" "<<b;}

Q22: a program to read a number and print its type (even or odd):

#include <iostream.h>

main(){ int n;

cout<<"n = "; cin>>n;

if(n % 2 != 0) cout<<"Odd";

else cout<<"Even";}

Q23: write a program to calculate (y) from the equation: y=

#include <iostream.h>

#include <math.h>

main(){ float x, y;

cout<<"x = "; cin>>x;

if(x>=0) y = 5-pow(x,2);

if(x<0) y = 2\*pow(x,3);

cout<<"y = "<< y;}

Q24: a program to read two numbers and print the value of the greater one:

#include <iostream.h>

main(){ int a, b;

cout<<"a = "; cin>>a;

cout<<"b = "; cin>>b;

if(a>b) cout<<a;

else cout<<b;}

Q25: write a program to read two numbers and an operation to apply it on them:

#include <iostream.h>

main(){ float a, b;

char s;

cout<<"a, s, b \n";

cin>>a>>s>>b;

if(s=='+') cout<<a+b;

if(s=='-') cout<<a-b;

if(s=='\*') cout<<a\*b;

if(s=='/') cout<<a/b;}

Q26: a program to calculate y from the equation: y=

#include <iostream.h>

#include <math.h>

main() { int x, y;

cout<<"x = "; cin>>x;

switch(x) {

case -5: y=3\*x-7; break;

case 2:

case 5: y=5\*pow(x,2); break;

case -4:

case 4: y=x-4\*pow(x,3); break; }

cout<<"y = "<< y;}

Q27: write a program to calculate the factorial of a number after reading it:

#include <iostream.h>

main(){ int n, f=1;

cout<<"n = "; cin>>n;

for(int i=0; i<n; i++)

f \*= (n-i);

cout<<"f = "<< f;}

Q28: write a program to calculate the summation of the numbers: 4 , 4.5 , 5 , … , 9.5 , 10

#include <iostream.h>

main(){ float n=4, sum=0;

do { sum += n;

n += 0.5;

} while(n<=10);

cout<<"sum = "<< sum;}

Q29: write a program to calculate the sum and average of (n ) numbers:

#include <iostream.h>

main(){ int n, sum = 0, x;

cout<<"n = "; cin>>n;

for(int i=1; i<=n; i++)

{cout<<"x"<<i<<" = "; cin>>x;

sum += x; }

cout<<"avg = "<< sum/n;}

Q30: a program to read (n) numbers and print the maximum one among them:

#include <iostream.h>

main(){ int n, max, x;

cout<<"n = "; cin>>n;

cout<<"x1 = "; cin>>x;

max = x;

for(int i=2; i<=n; i++)

{cout<<"x"<<i<<" = "; cin>>x;

*if(x > max) max=x;*}

cout<<"max = "<< max;}

Q31: a program to read (n) numbers and print the minimum one among them:

#include <iostream.h>

main(){int n, min, x;

cout<<"n = "; cin>>n;

cout<<"x1 = "; cin>>x;

min = x;

for(int i=2; i<=n; i++)

{cout<<"x"<<i<<" = "; cin>>x;

*if(x < min) min=x;* }

cout<<"min = "<< min;}

Q32: write a program to calculate the distance between two points using the following equation: d=

#include <iostream.h>

#include <math.h>

main(){ float ax, ay, az, bx, by, bz;

cout<<"Enter ax, ay, az \n";

cin>>ax>>ay>>az;

cout<<"Enter bx, by, bz \n";

cin>>bx>>by>>bz;

cout<<"d = "<<

sqrt(pow(ax-bx,2)+pow(ay-by,2)+pow(az-bz,2));}

Q33: write a program to read a triangle three sides and print " equilateral" when all the sides are equal and print "isosceles" when two sides are equal and print "scalene" when all the sides are different:

#include <iostream.h>

#include <math.h>

main(){ float L1, L2, L3;

cout<<"Enter L1, L2, L3 \n";

cin>>L1>>L2>>L3;

if(L1==L2&&L1==L3&&L2==L3) cout<<"Equilateral";

else

if(L1==L2||L1==L3||L2==L3) cout<<"Isosceles";

else

if(L1!=L2&&L1!=L3&&L2!=L3) cout<<"Scalene";}

Q34: write a program to calculate the area of a triangle using the following equations:

Area=as L1, L2, L3 are the triangle sides and s=(L1+L2+L3)/2

#include <iostream.h>

#include <math.h>

main(){ float L1, L2, L3, s;

cout<<"Enter L1, L2, L3 \n";

cin>>L1>>L2>>L3;

s=(L1+L2+L3)/2;

cout<<"area = << sqrt(s\*(s-L1)\*(s-L2)\*(s-L3));}

Q35 : to show the stars in the figure below: // \*

#include <iostream.h> // \* \*

void main() // \* \* \*

{ // \* \* \* \*

for(int i=1;i<=4;i++)

{ for(int j=1;j<=i;j++)

cout<<"\*";

cout<<endl; }}

---------------------------------

Q36: to show the stars in the figure below:

#include <iostream.h> // \* \* \* \*

void main() // \* \* \*

{ // \* \*

for(int i=4;i>=1;i--) // \*

{

for(int j=1;j<=i;j++)

cout<<"\*";

cout<<endl; }}

----------------------------

Q37: to show the stars in the figure below:

#include <iostream.h>

void main()

{ // \*

for(int i=1;i<=4;i++) // \* \*

{ // \* \* \*

for(int j=1;j<=4-i;j++) // \* \* \* \*

cout<<" ";

for(int k=1;k<=i;k++)

cout<<"\*";

cout<<endl; }}

---------------------------

Q38: to show the stars in the figure below:

#include <iostream.h> // \* \* \* \*

void main() // \* \* \*

{ // \* \*

for(int i=4;i>=1;i--) // \*

{

for(int j=1;j<=4-i;j++)

cout<<" ";

for(int k=1;k<=i;k++)

cout<<"\*";

cout<<endl; }}

------------------------

Q39: to show the stars in the figure below:

# include <iostream.h> // \*

void main() // \* \* \*

{ // \* \* \* \* \*

int i,j,k,x=3,y=1; // \* \* \* \* \* \* \*

for(i=1;i<=7;i++) // \* \* \* \* \*

{ // \* \* \*

for(j=1;j<=x;j++) // \*

cout<<" ";

for(k=1;k<=y;k++)

cout<<"\*";

cout<<endl;

if(i<4)

{ x--;

y=y+2; }

else

{ x++;

y-=2; } }}

--------------------------------------

Q40: to show the numbers in the figure below:

# include <iostream.h>

void main()

{ int i,j; // 2 3 4 5 6 7

for(i=2;i<=7;i++) // 3 4 5 6 7 8

{ // 4 5 6 7 8 9

for(j=i;j<=i+5;j++) // 5 6 7 8 9 10

cout<<j<<" "; // 6 7 8 9 10 11

cout<<endl; // 7 8 9 10 11 12

}}

------------------------------------

Q41: to show the numbers in the figure below:

#include <iostream.h> // 1

void main() // 2 1

{ // 3 2 1

for(int i=1;i<=4;i++) // 4 3 2 1

{

for(int j=i;j>=1;j--)

cout<<j;

cout<<endl; }}

-----------------------------

Q42: to show the numbers in the figure below:

# include <iostream.h>

void main(){ int i,j,k,x=2,y=1;

for(i=1;i<=5;i++)

{ for(j=1;j<=x;j++)

cout<<" ";

for(k=1;k<=y;k++)

cout<<y;

cout<<endl;

if(i<3)

{ x--; 1

y=y+2; } 333

else 55555

{ x++; 333

y-=2; } }} 1

---------------------------

Q43: what is the output of the following program?

#include <iostream.h>

void main()

{

for(int i=4;i>=1;i--)

{ for(int j=i;j>=1;j--)

cout<<j;

cout<<endl; }}

---------------------

Q44: what is the output of the following program?

#include <iostream.h>

void main()

{for(int i=4;i>=1;i--)

{ for(int j=1;j<=i;j++)

cout<<j;

cout<<endl; }}

Q45: write a program to solve the following series: s=( x + x\*2/2 + x\*3/3 + x\*4/4 +....+ x\*n/n)

# include <iostream.h>

void main(){ int j,x,p,n;

double i,s=0.0;

cout<<"Enter x value\t";

cin>>x;

cout<<"Enter n value\t";

cin>>n;

for(i=1;i<=n;i++)

{p=1;

for(j=1;j<=i;j++)

p=p\*x;

s=s+p/i; }

cout<<"The sum =\t "<<s;}

-----------------------

Q46: write a program to solve the following series: s=( x\*2/2! + x\*4/4! + x\*6/6!+....+ x\*n/n!)

# include <iostream.h>

void main(){ int j,x,k,i,cp=2,cf=2,n;

double f,p,s=0.0;

cout<<"Enter x value\t";

cin>>x;

cout<<"Enter n value\t";

cin>>n;

for(i=1;i<=n;i++)

{p=1;

f=1;

for(j=1;j<=cp;j++)

p=p\*x;

for(k=1;k<=cf;k++)

f=f\*k;

s=s+p/f;

cp+=2;

cf+=2; }

cout<<"The sum =\t "<<s;}

----------------------

Q47: write a program to solve the following series: s=( x\*1/2! + x\*3/4! + x\*5/6!+....+ x\*a/(a+1)!)

# include <iostream.h>

void main(){ int j,x,k,i,cp=1,cf=2,n;

double f,p,s=0.0;

cout<<"Enter x value\t";

cin>>x;

cout<<"Enter n value\t";

cin>>n;

for(i=1;i<=n;i++)

{ p=1;

f=1;

for(j=1;j<=cp;j++)

p=p\*x;

for(k=1;k<=cf;k++)

f=f\*k;

s=s+p/f;

cp+=2;

cf+=2; }

cout<<"The sum =\t "<<s;}

-------------------------

Q48: write a program to solve the following series: s=( x\*1/2! + x\*3/4! + x\*5/8! + x\*7/16! +....+ x\*11/64!).

# include <iostream.h>

void main(){ int j,x,k,i,cp=1,cf=2;

double f,p,s=0.0;

cout<<"Enter x value\t";

cin>>x;

for(i=1;i<=6;i++)

{ p=1;

f=1;

for(j=1;j<=cp;j++)

p=p\*x;

for(k=1;k<=cf;k++)

f=f\*k;

s=s+f/p;

cp+=2;

cf\*=2; }

cout<<"The sum =\t "<<s;}

----------------------------------

Q50: write a program to solve the following series: s= ( 2!/x\*2 – x\*4 /4! + 8!/x\*8 – x\*16 /16! +....- x\*64/64!)

# include <iostream.h>

void main(){ int j,x,k,i,cp=2,cf=2,c=1,m=1;

double f,p,s=0.0;

cout<<"Enter x value\t";

cin>>x;

for(i=1;i<=6;i++)

{ p=1;

f=1;

for(j=1;j<=cp;j++)

p=p\*x;

for(k=1;k<=cf;k++)

f=f\*k;

if(c%2==1)

s=s+m\*f/p;

else

s=s+m\*p/f;

cp\*=2;

cf\*=2;

m\*=-1;

c++; }

cout<<"The sum =\t "<<s;}

Q51: write a program to solve the following series: s= 2!/x2 - x4 /4! + 8!/x8 – x16 /16! +....- x64/64!.

# include <iostream.h>

void main(){ Int X,N,M ,T ,P;

Cin>>x;

N=2;

For (int i=1 ;i<=16 ;i++)

{ T=1;

For(int K =1 ; k<=N ; k++)

T=T\*K;

P=1;

M=N\*2;

For(int j=1 ; j<=M ; j++)

P=p\*j;

S=s+(T/pow(X,N) – pow(X,M)/P);

N=N\*4 ;}

Q52: Write a Program that does the following:-



* + Promotes the user to enter 5 numbers.
  + Print the Numbers.
  + Print the sum and average of these five numbers.

|  |
| --- |
| #include<iostream.h>  void main(){int a,b,c,d,e,sum,avg;  cout<<"Enter the five numbers:";  cin>>a>>b>>c>>d>>e;  cout<<"the numbers you have entered are: ";  cout<<a<<" "<<b<<" ";  cout<<c<<" "<<d<<" "<<e<<endl;  sum = a + b + c + d + e;  avg = sum/5;  cout<<"the sum is "<<sum;  cout<<" and the average is "<<avg<<endl;} |

Q53: Write a Program that promotes the user to enter the length and width of a rectangle and print its area.

|  |
| --- |
| #include <iostream.h>  void main(){double length,width;  cout<<"Enter the Length an the Width of the rectangle:";  cin>>length>>width;  cout<<"the area of the rectangle is "<<length\*width<<endl;} |

Q54: Write a Program to find the absolute value of an integer.

|  |
| --- |
| #include <iostream.h>  void main(){int a;  cout<<"enter a number:";  cin>>a;  if(a<0)  a \*= -1;  cout<<"the absolute value of the number is: "<<a<<endl;} |

Q55: Write a Program that reads two different integers and print the largest.

|  |
| --- |
| #include <iostream.h>  void main(){int a,b;  cout<<"enter two numbers:";  cin>>a>>b;  if(a>b)  cout<<a<<" is the largest"<<endl;  else  cout<<b<<" is the largest"<<endl;} |

Q56: Write a Program that reads operation with it's operands and then print the result.

|  |
| --- |
| #include <iostream.h>  void main(){double a,b;  char x;  cout<<"enter the operation:";  cin>>a>>x>>b;  if(x=='+')  cout<<a+b<<endl;  else if (x=='-')  cout<<a-b<<endl;  else if (x=='\*')  cout<<a\*b<<endl;  else if (x=='/')  cout<<a/b<<endl;  else  cout<<"Unknown operation"<<endl;} |

Q57: Write a Program to read a character if it's in alphabet then find if its uppercase or lowercase. If it’s a digit print that it is a digit. Else print that it’s a special character.

|  |
| --- |
| #include <iostream.h>  void main(){char x;  cout<<"enter the char:";  cin>>x;  if(x>='A' && x<='Z')  cout<<x<<" is Uppercase char"<<endl;  else if(x>='a' && x<='z')  cout<<x<<" is Lowercase char"<<endl;  else if(x>='0' && x<='9')  cout<<x<<" is a Digit"<<endl;  else  cout<<x<<" is a special char"<<endl;} |

Q58: Write a loop to print the numbers from 1 to 10

|  |
| --- |
| #include <iostream.h>  void main(){ int i = 0;  while(i<=10)  cout<<i++<<endl; } |

Q59: Write a Program to print the multiple of number 5 between 0 to 20.

|  |
| --- |
| #include <iostream.h>  void main(){ int i = 5;  while(i<=20)  {cout<<i<<endl;  i+=5;}} |

Q60: Write a loop to find the sum of numbers from 1 to 20.

|  |
| --- |
| #include <iostream.h>  void main(){int sum=0,i = 0;  while(i<=20)  sum +=i++;  cout<<"the sum is: "<<sum<<endl;} |

Q61: Write a loop to find the sum of odd numbers from 20 to 300.

|  |
| --- |
| #include <iostream.h>  void main(){int i = 20,sum = 0;  while(i<=300)  {if(i%2==1)  sum += i;  i++; }  cout<<"the sum is: "<<sum<<endl;} |

Q62: Find the sum of even number from 1 to 30.

|  |
| --- |
| #include <iostream.h>  void main(){int i = 1,sum = 0;  while(i<=30)  {if(i%2==0)  sum += i;  i++;}  cout<<"the sum is: "<<sum<<endl;} |

Q63: Write a loop to find factorials for an entered number.

|  |
| --- |
| #include <iostream.h>  void main(){int x,y;  cout<<"enter the number:";  cin>>x;  y=x;  while(x!=0)  {if(y%x==0)  cout<<x<<endl;  x--;}} |

Q64: Find the maximum between 20 numbers.

|  |
| --- |
| #include <iostream.h>  void main(){int x,y;  cout<<"enter the number:";  cin>>x;  int i = 0;  while(i<=20)  {if(x>y)  {y =x;  cout<<"the Maximum until now is "<<y<<endl;}  cin>>x;  i++;}} |

Q65: Write a for loop to print number 1 to 40 each 5 on line.

|  |
| --- |
| #include <iostream.h>  #include <iomanip.h>  void main(){  for(int i=1;i<=40;i++)  {cout<<setw(3)<<i;  if(i%5==0)  cout<<endl; }} |

Q66: Write a Program that reads a number and perform the following

* + print the number digits in reverse order.
  + Find the sum of it's digits.
  + Find the average of it's digits.

|  |
| --- |
| #include<iostream>  #include<iomanip>  using namespace std;  void main(){int x,y,z=0,avg=0,sum=0;  cin>>x;  while(x!=0)  {y = x%10;  x/=10;  cout<<y<<endl;  sum += y;  z++; }  avg = sum/z;  cout<<"the sum is "<<sum<<endl;  cout<<"the avg is "<<avg<<endl;} |

Q67: Write a Program to read a set of non-zero(when read zero, stop the program) and find:

* + sum
  + average
  + maximum value
  + minimum value
  + the number of values
  + sum of numbers that divide on 5.

|  |
| --- |
| #include<iostream>  #include<iomanip>  using namespace std;  void main(){int x,y,max,min,z=0,avg=0,sum=0,sum5=0;  cin>>x;  max = x;  min = x;  while(x!=0)  {if(x>max)  max = x;  if(x<min)  min =x;  sum+=x;  z++;  if(x%5==0)  sum5+=x;  cin>>x;}  avg = sum/z;  cout<<"the sum is "<<sum<<endl;  cout<<"the average is "<<avg<<endl;  cout<<"the maximum value is "<<max<<endl;  cout<<"the minimum value is "<<min<<endl;  cout<<"the numbers of values is "<<z<<endl;  cout<<"the sum of numbers that divide on 5 is "<<sum5<<endl;} |

Q68: using functions, write a program to read an integer array with 5 elements and print the even numbers and odd numbers of it: (repeat all the previous for second array)

#include <iostream.h>

read(int ar[]) {

cout<<"Enter 5 numbers:";

for(int i=0; i<=4; i++)

cin>>ar[i];}

isEven(int x) {

if(x % 2 == 0) return 1;

return 0;}

isOdd(int x) {

return (!isEven(x));}

printEven(int ar[]) {

cout<<"Even numbers: ";

for(int i=0; i<=4; i++)

if(isEven(ar[i])) cout<<ar[i]<<" ";

cout<<endl;}

printOdd(int ar[]) {

cout<<"Odd numbers: ";

for(int i=0; i<=4; i++)

if(isOdd(ar[i])) cout<<ar[i]<<" ";

cout<<endl;}

main() {int a[5];

read(a);

printEven(a);

printOdd(a);

int b[5];

read(b);

printEven(b);

printOdd(b);}

Q69: using functions, write a program to read an integer array with 5 elements and print the positive numbers and negative numbers of it: (repeat all the previous for second array)

#include <iostream.h>

read(int ar[]) {

cout<<"Enter 5 numbers:";

for(int i=0; i<=4; i++)

cin>>ar[i];}

isPositive(int x) {

if(x >= 0) return 1;

return 0;}

isNegative(int x) {

return (!isPositive(x));}

printPositive(int ar[]) {

cout<<"Positive numbers: ";

for(int i=0; i<=4; i++)

if(isPositive(ar[i])) cout<<ar[i]<<" ";

cout<<endl;}

printNegative(int ar[]) {

cout<<"Negative numbers: ";

for(int i=0; i<=4; i++)

if(isNegative(ar[i])) cout<<ar[i]<<" ";

cout<<endl;}

main() {int a[5];

read(a);

printPositive(a);

printNegative(a);

int b[5];

read(b);

printPositive(b);

printNegative(b);}

Q70: using functions, write a program to read an integer array with 5 elements and print the prime and not prime numbers of it: (repeat all the previous for second array):

#include <iostream.h>

#include <math.h>

read(int ar[]) {

cout<<"Enter 5 numbers:";

for(int i=0; i<=4; i++)

cin>>ar[i];}

isPrimary(int x) {

for(int i=2; i<=sqrt(x); i++)

if(x % i == 0) return 0;

return 1;}

isNotPrimary(int x) {

return (!isPrimary(x));}

printPrimary(int ar[]) {

cout<<"Primary numbers: ";

for(int i=0; i<=4; i++)

if(isPrimary(ar[i])) cout<<ar[i]<<" ";

cout<<endl;}

printNotPrimary(int ar[]) {

cout<<"Not Primary numbers: ";

for(int i=0; i<=4; i++)

if(isNotPrimary(ar[i])) cout<<ar[i]<<" ";

cout<<endl;}

main() {int a[5];

read(a);

printPrimary(a);

printNotPrimary(a);

int b[5];

read(b);

printPrimary(b);

printNotPrimary(b);}

Q71: using functions, read two (5-real elements) arrays and print the result of the addition, subtraction, multiplication, and division of each element with the corresponding element in the second array:

#include <iostream.h>

read(float ar[]) {

cout<<"Enter 5 numbers:";

for(int i=0; i<=4; i++)

cin>>ar[i];}

calc(float a[], char p, float b[], float c[]) {

for(int i=0; i<=4; i++) {

if(p=='+') c[i]=a[i]+b[i];

if(p=='-') c[i]=a[i]-b[i];

if(p=='\*') c[i]=a[i]\*b[i];

if(p=='/') c[i]=a[i]/b[i]; }}

print(char \*msg, float ar[]) {

cout<<msg;

for(int i=0; i<=4; i++)

cout<<ar[i]<<" ";

cout<<endl;}

main() { float a[5], b[5], c[5];

read(a);

read(b);

calc(a, '+', b, c);

print("Addition: ",c);

calc(a, '-', b, c);

print("Subtraction: ",c);

calc(a, '\*', b, c);

print("Multiply: ",c);

calc(a, '/', b, c);

print("Diving: ",c);}

Q72: using functions, read two integer arrays and calculate the average of each one, the sum of each array elements, the min and max values for each one of them:

#include <iostream.h>

read(int ar[]) {

cout<<"Enter 7 numbers:";

for(int i=0; i<=6; i++)

cin>>ar[i];}

getMax(int ar[], int &max) {

max = ar[0];

for(int i=1; i<=6; i++)

if(ar[i] > max) max = ar[i];}

getMin(int ar[], int &min) {

min = ar[0];

for(int i=1; i<=6; i++)

if(ar[i] < min) min = ar[i];}

getSum(int ar[], int &sum) {

sum = 0;

for(int i=0; i<=6; i++)

sum += ar[i];}

getAvg(int ar[], int &avg) {

int sum;

getSum(ar, sum);

avg = sum / 7;}

print(int max, int min, int sum, int avg) {

cout<<"Max="<<max<<endl;

cout<<"Min="<<min<<endl;

cout<<"Sum="<<sum<<endl;

cout<<"Avg="<<avg<<endl;}

main() { int max, min, sum, avg;

int a[7]; read(a);

getMax(a, max); getMin(a, min);

getSum(a, sum); getAvg(a, avg);

print(max, min, sum, avg);

int b[7]; read(b);

getMax(b, max); getMin(b, min);

getSum(b, sum); getAvg(b, avg);

print(max, min, sum, avg);}

Q73: using functions, read an integer array and search for an element in it:

#include <iostream.h>

char\* noName[]={"first","second","third","forth","fifth"};

readArray(int ar[]) {

cout<<"Enter 5 numbers:";

for(int i=0; i<=4; i++)

cin>>ar[i];}

readVal(int &val) {

cout<<"Enter value: ";

cin>>val;}

search(int ar[], int val, int &r) {

r = -1;

for(int i=0; i<=4; i++)

if(ar[i] == val) r = i;}

print(int r) {

if(r != -1)

cout<<"It is "<<noName[r]<<" element.";

else

cout<<"Not found.";}

main() { int ar[5], n, r;

readArray(ar);

readVal(val);

search(ar,val,r);

print(r);}

Q74: using function, read two arrays and sort the first one ascending and the other one descending:

#include <iostream.h>

read(int ar[]) {

cout<<"Enter 5 numbers:";

for(int i=0; i<=4; i++)

cin>>ar[i];}

sortAsc(int ar[]) {

int temp;

for(int x=0; x<=4-1; x++)

for(int y=x+1; y<=4; y++)

if(ar[x]>ar[y]) {

temp = ar[x];

ar[x] = ar[y];

ar[y] = temp;}}

sortDes(int ar[]) {

int temp;

for(int x=0; x<=4-1; x++)

for(int y=x+1; y<=4; y++)

if(ar[x]<ar[y]) {

temp = ar[x];

ar[x] = ar[y];

ar[y] = temp;}}

print(int ar[]) {

for(int i=0; i<=4; i++)

cout<<ar[i]<<" ";

cout<<endl;}

main() {int a[5];

read(a);

sortAsc(a);

print(a);

int b[5];

read(b);

sortDes(b);

print(b);}

Q75: write a program to read a number and calculate if it is prime or not:

# include <iostream.h>

void main(){int x;

char\* m ;

m="prim";

cin>>x;

for(int i=2;i<x;i++)

if (x%i==0)

m="not prim";

cout<<m;}

Q1: write a program that read the primary salary and the sales and calculate the total salary which equals the primary salary plus the commission that is calculated as:

* Comm=2% if the sales are less than or equal three times of the primary salary.
* Comm=3% if the sales are more than three times of the primary salary.
* Comm=5% if the sales are more than five times of the primary salary.

(comm=0.02\*bsalary, if(sales<=3\*bsalary))

(comm=0.03\*bsalary, if(sales>3\*bsalary))

(comm=0.05\*bsalary, if(sales>5\*bsalary))

#include <iostream.h>

main(){float bsalary, sales, comm;

cout<<"basic salary = ";

cin>>bsalary;

cout<<"sales = "; cin>>sales;

if(sales>5\*bsalary) comm=0.05\*bsalary;

else

if(sales>3\*bsalary) comm=0.03\*bsalary;

else

if(sales<=3\*bsalary) comm=0.02\*bsalary;

cout<<"net salary = "<< bsalary + comm;}

Q2: Using functions, write a program to calculate the number of types and quantities of a store (50 type max.) if you know that the type quantity increased when we choose input process (in) and entering the name and quantity of that type and decreased if we choose the process (out) by entering the name and quantity of required out type.

#include<iostream.h>

#include<string.h>

struct ITEM {

char name[20];

int qty;

} ar[50];

int cnt=0;

read(ITEM &val) {

cout<<"Enter item name:";

cin>>val.name;

cout<<"Enter qty:";

cin>>val.qty; }

search(ITEM val, int &r) {

r = -1;

for(int i=0; i<=cnt; i++)

if(strcmp(ar[i].name,val.name)==0) r=i; }

process(char t) {

ITEM val;

read(val);

int r;

search(val,r);

if(t=='i') {

if(r != -1) ar[r].qty += val.qty;

else {

ar[cnt] = val;

cnt++; } }

if(t=='o') {

if(r != -1) ar[r].qty -= val.qty;

else cout<<"Item not found!\n"; }}

print() {

for(int i=0; i<cnt; i++)

cout<<ar[i].name<<"\t"<<ar[i].qty<<"\n";}

main() {

int s;

do {

cout<<"(1-in 2-out 3-print 4-exit): ";

cin>>s;

if(s==1) process('i');

if(s==2) process('o');

if(s==3) print();

} while(s!=4); }

Q3: a program to print the following figure of numbers:

|  |  |
| --- | --- |
| 1  333  55555  7777777  999999999  7777777  55555  333  1 | #include<iostream.h>  void main () {int x,i,j;  for (i=1;i<=9;i+=2)  {for (j=1;j<=I;j++)  cout<<i<<endl;  for (i=7;i>=1;i-=2)  {for(j=1;j<=i;j(++  cout<<i<<endl; } |

#include<iostream.h>  
#include<conio.h>  
#include<stdio.h>  
void main()  
{clrscr();  
  //Declaration part  
  int a,b,sum=0;  
  //Processing part  
printf("Input the first number\n");  
cin>>a;  
printf("Input the second number\n");  
cin>>b;  
sum=a+b;  
printf("The Output Is\n");  
cout<<sum;  
getch();  
} 

//write a programme to add two integer number by using function  
#include<iostream.h>  
#include<conio.h>  
#include<stdio.h>  
int add(int x,int y)  
{int c=0;  
c=x+y;  
return(c);}  
void main()  
{clrscr();  
  //Declaration part  
  int a,b,sum=0;  
  //Processing part  
printf("Input the first number\n");  
cin>>a;  
  
printf("Input the second number\n");  
cin>>b;  
sum=add(a,b);  
printf("The Output Is\n");  
cout<<sum;  
getch();} 

/\* write a program in c++ to read a letter. if the letter is small convert it to capital and if it is capital convert it to small \*/  
#include<iostream.h>  
#include<conio.h>  
#include<stdio.h>  
void main()  
{clrscr();  
  //Declaration part  
  char ch,c;  
//Processing part  
     printf("Input the character \n");  
     cin>>ch;  
if((ch>='a') && (ch<='z'))  
    c=ch-32;  
   else  
  c=ch+32;  
   printf("The character after processing Is\n");  
   cout<<c;  
 getch();} 

/write a programme to add two integer number or sub or mult or div according to user input (like calculator)\*/  
#include<iostream.h>  
#include<conio.h>  
#include<stdio.h>  
void main()  
{clrscr();  
  //Declaration part  
  int a,b,s=0;  
    char c;  
  //Processing part  
printf("Input the first number\n");  
cin>>a;  
printf("Input the second number\n");  
cin>>b;  
printf("Input the operation appliied on them\n");  
cin>>c;  
switch(c)  
{ case '+':{ s=a+b;  
     cout<<"Result is "<<s;  
     break;     }  
 case '-':{ s=a-b;  
     cout<<"Result is "<<s;  
     break;     }  
 case '\*':{ s=a\*b;  
     cout<<"Result is "<<s;  
     break;     }  
 case '/':{ s=a/b;  
     cout<<"Result is "<<s;  
     break;     }  
default:cout<<"out of range. so my range is + - \* / Only";}  
getch();} 

/\*write a programme to find factorial of the input integer number\*/  
#include<iostream.h>  
#include<conio.h>  
#include<stdio.h>  
void main()  
{clrscr();  
  int a,f=1,index;

  printf("Input the number\n");  
cin>>a;  
for(index=a;index>=1;index--)  
f=index \* f;  
printf(" the factorial is\n");  
cout<<f;  
getch();} 

/\*write a programme to find power of the input integer number  
sample:base =2,to the power=6,result=64  
\*/  
#include<iostream.h>  
#include<conio.h>  
#include<stdio.h>  
void main()  
{  
clrscr();  
  int a,b,p=1,index;  
  
  printf("Input the base number\n");  
  cin>>a;  
   printf("Input the number that become to the power\n");  
  cin>>b;  
for(index=b;index>=1;index--)  
p=p\*a;  
  
printf(" the result is\n");  
cout<<p;  
getch();} 

/\* write a programme to find the absolute value of integer number  
\*/  
#include<iostream.h>  
#include<conio.h>  
#include<stdio.h>  
void main()  
{  
clrscr();  
  int y;  
  
  printf("Input the number\n");  
  cin>>y;  
if(y>=0)  
cout<<"result is "<<y;  
else  
cout<<"result is "<<-y;  
getch();  
} 

/\* write a programme to find factorial of 5 input integer number  
\*/  
#include<iostream.h>  
#include<conio.h>  
#include<stdio.h>  
void main()  
{  
clrscr();  
  int a,f=1,index;  
for (int i=0;i<5;i++)  
{printf("Input the number\n");  
cin>>a;  
f=1;  
for(index=a;index>=1;index--)  
f=index \* f;  
printf(" the factorial is\n");  
cout<<f<<"\n";  
}  
getch();}

Q: write a program to read two arrays and compare among each corresponding elements in each of them to produce a new array of the larger correspond of the two entered arrays:

#include<iostream.h>

main(){ int a[3][3],b[3][3],c[3][3];

int i,j;

cout<<"enter the first matrix elements"<<endl;

for (i=0;i<3;i++)

for (j=0;j<3;j++)

cin>>a[i][j];

cout<<"enter the second matrix elements"<<endl;

for (i=0;i<3;i++)

for (j=0;j<3;j++)

cin>>b[i][j];

for (i=0;i<3;i++)

for (j=0;j<3;j++)

{if (a[i][j]>b[i][j])

c[i][j]=a[i][j];

else

c[i][j]=b[i][j];}

for (i=0;i<3;i++)

for (j=0;j<3;j++)

cout<<"the new array of the larger numbers is"<<c[i][j]<<endl;}

Q: write a program to read two 3\*3 arrays and print a third array resulted from multiplying the main diagonal elements of the two read arrays and subtract the other elements of them each element with the corresponding one:

#include<iostream.h>

main(){ int a[3][3],b[3][3],c[3][3],i,j;

cout<<" enter 9 elements of the first array"<<endl;

for(i=0;i<3;i++)

for (j=0;j<3;j++)

cin>>a[i][j];

cout<<" enter 9 elements of the second array"<<endl;

for(i=0;i<3;i++)

for (j=0;j<3;j++)

cin>>b[i][j];

for(i=0;i<3;i++)

for (j=0;j<3;j++)

{if (i==j)

c[i][j]=a[i][j]\*b[j][j];

else

c[i][j]=a[i][j]-b[i][j];}

for(i=0;i<3;i++)

for (j=0;j<3;j++)

cout<<"the new array is c["<<i<<"]["<<j<<"]="<<c[i][j]<<endl;}

Q: write a program in C++ to calculate the positive difference between two matrices 4X4 such that the result of the difference between any two corresponding numbers in the arrays must be positive:

#include<iostream.h>

void main(){ int a[4][4],b[4][4],c[4][4],i,j;

cout<<"enter the elements of the first matric"<<endl;

for (i=0;i<4;i++)

for (j=0;j<4;j++)

cin>>a[i][j];

cout<<"enter the elements of the second matric"<<endl;

for (i=0;i<4;i++)

for (j=0;j<4;j++)

cin>>b[i][j];

for (i=0;i<4;i++)

for (j=0;j<4;j++)

{if (a[i][j]>=b[i][j])

c[i][j]=a[i][j]-b[i][j];

else

c[i][j]=b[i][j]-a[i][j];}

for (i=0;i<4;i++)

for (j=0;j<4;j++)

cout<<"the positive difference of the two matrices is"<<c[i][j]<<endl;}

Q: write a program to calculate the square root of the numbers such as (4,9,16,25,36) that has integer roots without using the (sqrt) function:

#include<iostream.h>

void main(){ int n,i;

cout<<"enter a number to calculate its square root, zero to terminate"<<endl;

cin>>n;

while(n!=0)

{for (i=1;i<=n;i++)

{if (i\*i==n)

cout<<"the square root of"<<n<<"="<<i<<endl;}

cin>>n;}

}

Q: write a program in c++ to convert 2D array to 1D array and fond the maximum number in the new array:

#include<iostream.h>

void main(){int a[2][3], b[6],i,j,k=0,max;

cout<<"enter the matrix elements"<<endl;

for(i=0;i<2;i++)

for(j=0;j<3;j++)

cin>>a[i][j];

for(i=0;i<2;i++)

for(j=0;j<3;j++)

cout<<a[i][j]<<" ";

cout<<"\n";

for(i=0;i<2;i++)

for(j=0;j<3;j++)

{b[k]=a[i][j];

k=k+1; }

for(i=0;i<k;i++)

cout<<b[i]<<" ";

cout<<"\n";

max=b[0];

for(i=0;i<k;i++)

{ if (b[i]>max)

max=b[i]; }

cout<<"the maximum number in the new matrix is"<<max ;

cin>>i;}

Q: write a program to output the following figure:

1

333

55555

7777777

999999999

7777777

55555

333

1

#include<iostream.h>

void main () {int x,i,j;

for (i=1;i<=9;i+=2)

{for (j=1;j<=i;j++)

cout<<i;

cout<<endl;}

for (i=7;i>=1;i-=2)

{for(j=1;j<=i;j++)

cout<<i;

cout<<endl;}

cin>>x;}

Q: write a program in C++ to show the following figure:

1

333

55555

7777777

999999999

7777777

55555

333

1

#include<iostream.h>

void main(){ int i,j,k;

for(i=1;i<=9;i+=2)

{for(k=i;k<=9;k+=2)

cout<<" ";

for(j=i;j>0;j--)

cout<<i;

cout<<"\n";}

for(i=7;i>=1;i-=2)

{for(k=i;k<=9;k+=2)

cout<<" ";

for(j=i;j>0;j--)

cout<<i;

cout<<"\n";}

cin>>i;}

Q: write a program to print the following numbers using for loop:

1 10 100 1000 10000

2 20 200 2000 20000

3 30 300 3000 30000

4 40 400 4000 40000

5 50 500 5000 50000

#include<iostream.h>

#include<math.h>

void main(){ int i,j,k;

for(i=1;i<=5;i++)

{for(j=0;j<=4;j++)

cout<<i\*pow(10,j)<<" ";

cout<<"\n";}

cin>>k;}

Q: write a program to display the multiply table of (1-10) numbers:

#include <iostream.h>

void main() {

for(int x=1;x<11;x++)

{ for(int y=1;y<11;y++)

cout<<y<<"\*"<<x<<"="<<x\*y<<"\t";

cout<<endl; }}

Q: write a c++ program to sum two arrays and print the result array in a 2D matrix form:

#include<iostream.h>

void main(){ int a[3][3],b[3][3],c[3][3],i,j;

cout<<"enter 9 elements of the first array"<<endl;

for (i=0;i<3;i++)

for (j=0;j<3;j++)

cin>>a[i][j];

cout<<"enter 9 elements of the second array"<<endl;

for (i=0;i<3;i++)

for (j=0;j<3;j++)

cin>>b[i][j];

for (i=0;i<3;i++)

for (j=0;j<3;j++)

c[i][j]=a[i][j]+b[i][j];

for (i=0;i<3;i++)

{for (j=0;j<3;j++)

cout<<"c["<<i<<"]["<<j<<"]="<<c[i][j]<<" ";

cout<<endl;}}