1. Write a program to print “Hello World” on the screen.
Code:

```
#include <iostream>
int main()
{
cout << "Hello world!";

return 0;

}
```

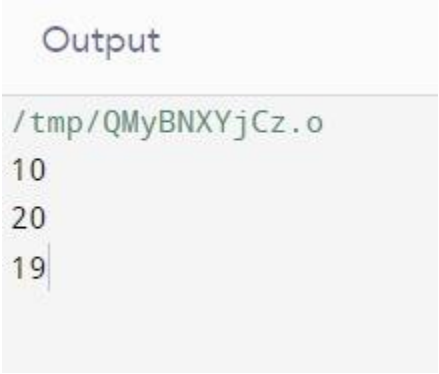
2. Write a program that generate the following output
10, 20, 19
Use an integer constant for 10, an arithmetic C++ ASSIGNMENT operator to generate the 20, and a decrement operator to generate 19.

Code:

```
#include <iostream>
using namespace std;
int main()
{
int var = 10;
cout << var << endl; // var is 10
```

```
var *= 2; // var becomes 20
cout << var-- << endl; // displays var, then decrements it
cout << var << endl; // var is 19

return 0;
}
```



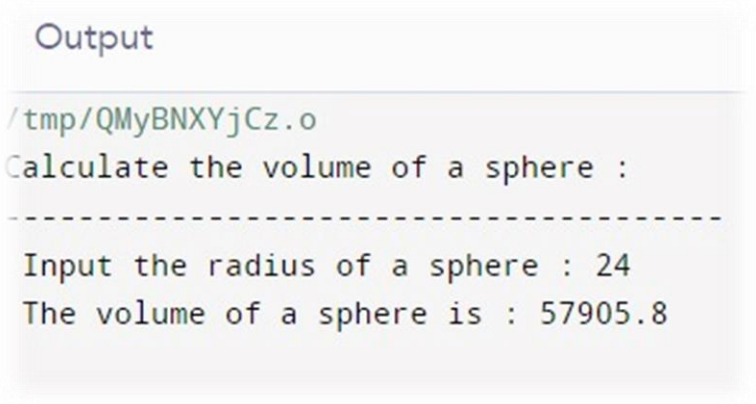
3. Write a program that asks the user to enter a radius value and then compute the volume of a sphere with the input radius.

Code:

```
#include <iostream>
#include <cmath>
using namespace std;
int main()
{
double radius, volume;
const double pi = 3.14159265;
cout << "\n\n Calculate the volume of a sphere :\n";
cout << "---------------------------------------\n";
cout<<" Input the radius of a sphere : ";
cin>>radius;
volume=(4*pi*pow(radius, 3))/3;
cout<<" The volume of a sphere is : "<< volume << endl;
```

```
cout << endl;

return 0;
}
```



4. Write a program that takes three input of sides of a triangle. The program should indicate whether the triangle would be formed or not. If it can be formed it also indicates the type.

Code:

```
#include <iostream>
using namespace std;
int main()
{
double s1,s2,s3;
cout << "Enter length of Side 1 = ";
cin >> s1;
cout << "Enter length of Side 2 = ";
cin >> s2;
cout << "Enter length of Side 3 = ";
cin >> s3;
if(((s1+s2)>s3) || ((s2+s3)>s1) || ((s1+s3)>s2))
{
```

```
cout << "Triangle Will Form" << "\n";
if(s1==s2==s3)
{
cout << "Its Equilateral Triangle";
}
else
if((s1==s2)||(s2==s3)||(s3==s1))
{
cout << "Its Isoceles Triangle";
}
else
if((s1=!s2)||(s2=!s3)||(s3=!s1))
{
cout << "Its Scalene Triangle";
}
}
else
{
cout << "Triangle Will not Form";
}
return 0;
}
```

Output

```
/tmp/QMyBNXYjCz.o
Enter length of Side 1 = 2
Enter length of Side 2 = 4
Enter length of Side 3 = 7
Triangle Will Form
Its Scalene Triangle
```

5. Write a program that takes one input as number and it will display whether the number is +ve, -ve or zero. If the number is +ve, then it will display whether the number is odd or even.

Code:

```
#include <iostream>
using namespace std;
int main()
{
int a;
cout << "Enter Number = ";
cin >> a;
if(a>0)
{
cout << "Number Is Positive" << "\n";
{
if((a%2)==0)
cout << "Number Is Even";
else
cout << "Number Is Odd";
}
}
else
if(a<0)
{
cout << "Number Is Negative";
}
else
if(a==0)
{
cout << "Number Is Zero";
}
return 0;
}
```

Output

```
/tmp/QMyBNXYjCz.o
Enter Number = 8
Number Is Positive
Number Is Even
```

6. Write a program which takes username as input and it greets to user with his name.

Code:

```
#include <iostream>
#include <string>
int main() {
std::string name;
std::cout << "Please enter a name:";
std::cin >> name;
std::cout << "Hello " << name;
}
```

7. Write a program, which takes two integer numbers as input and it shows their exchanged value. (Don’t use third variable)

Code:

```
#include <iostream>
using namespace std;
int main()
{
int x = 10, y = 5;
// Code to swap 'x' and 'y'
x = x + y; // x now becomes 15
y = x - y; // y becomes 10
x = x - y; // x becomes 5
cout << "After Swapping: x =" << x << ", y=" << y;
return 0;
}
```

Output

```
/tmp/QMyBNXYjCz.o
After Swapping: x =5, y=10
```

8. WAP to check Leap Year.

Code:

```
#include<iostream>
using namespace std;
int main() {
int year = 2019;
if (((year % 4 == 0) && (year % 100 != 0)) || (year % 400 == 0))
cout<<year<<" is a leap year";
else
cout<<year<<" is not a leap year";
return 0;
}
```

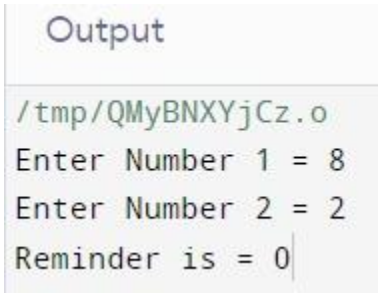
Output

```
/tmp/QMyBNXYjCz.o
2019 is not a leap year
```

9. WAP for finding remainder of division of 2 numbers.

Code:

```
#include <iostream>
using namespace std;
int main()
{
int a,b,c;
cout << "Enter Number 1 = ";
cin >> a;
cout << "Enter Number 2 = ";
cin >> b;
c = a%b;
cout<< "Reminder is = " << c;
return 0;
}
```



10. WAP to calculate Area of Rectangle.

Code:

```
#include <iostream>
using namespace std;
int main()
{
int l,w,a;
cout << "Enter Length = ";
cin >> l;
cout << "Enter Width = ";
```

```
cin >> w;
a = l*w;
cout << "Area of Rectangle = " << a;
return 0;
}
```

Output

```
/tmp/QMyBNXYjCz.o
Enter Length = 4
Enter Width = 2
Area of Rectangle = 8
```

11. WAP to calculate Area of Square.

Code:

```
#include <iostream>
using namespace std;
int main(){
int side, area;
// Asking for input
cout << "Enter the side of square: ";
cin >> side;
// Calculating area
area = side * side;
// Displaying output
cout << "Area of square of side " << side << " is: " << area;
return 0;
}
```

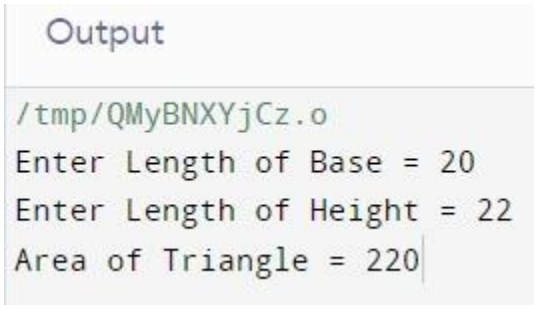
Output

```
/tmp/QMyBNXYjCz.o
Enter the side of square: 24
Area of square of side 24 is: 576
```

12. WAP to calculate the area of Triangle.

Code:

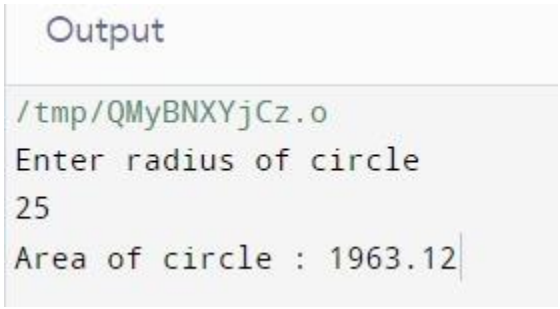
```
#include <iostream>
using namespace std;
int main()
{
double b,h,a;
cout << "Enter Length of Base = ";
cin >> b;
cout << "Enter Length of Height = ";
cin >> h;
a = (1.0/2.0)*b*h;
cout << "Area of Triangle = " << a;
return 0;
}
```



13. WAP to calculate Area and Circumference of Circle.

Code:

```
#include <iostream>
using namespace std;
#define PI 3.141
int main(){
float radius, area;
cout << "Enter radius of circle\n";
cin >> radius;
// Area of Circle = PI x Radius X Radius
area = PI*radius*radius;
cout << "Area of circle : " << area;
return 0;
}
```

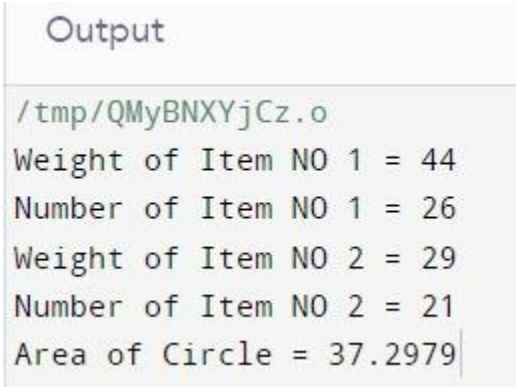


14. WAP for two item’s weight (floating points' values) and number of purchase (floating points' values) and calculate the average value of the items.

Test Data: Weight - Item1: 15 No. of item1: 5 Weight - Item2: 25 No. of item2: 4
Expected Output: Average Value = 19.444444

Code:

```
#include <iostream>
using namespace std;
int main()
{
float w1,w2,n1,n2,avg;
cout << "Weight of Item NO 1 = ";
cin >> w1;
cout << "Number of Item NO 1 = ";
cin >> n1;
cout << "Weight of Item NO 2 = ";
cin >> w2;
cout << "Number of Item NO 2 = ";
cin >> n2;
avg = (((w1*n1)+(w2*n2))/(n1+n2));
cout << "Area of Circle = " << avg ;
return 0;
}
```



15. WAP to calculate a bike's average consumption from the given total distance (integer value) travelled (in km) and spent fuel.

Test Data: Input total distance in km: 350 Input total fuel spent in litres: 5
Expected Output: Average consumption (km/lt) 70.00

Code:

```
#include <iostream>
using namespace std;
int main()
{
float a,b,cons;
cout << "Input Total Distance (Km)= ";
cin >> a;
cout << "Input Total Fuel (Lit)= ";
cin >> b;
cons = a/b;
cout << "Average Consumption (Km/Lit)= " << cons;
return 0;
}
```

Output

```
/tmp/QMyBNXYjCz.o
Input Total Distance (Km)= 100
Input Total Fuel (Lit)= 50
Average Consumption (Km/Lit)= 2
```

16. Write a program that will give the grade of the student based on the percentage he got in the course.

Use the following criteria for assigning grades:
Grade = A (when percentage >= 60)
Grade = B (when percentage >= 50 and percentage < 60)
Grade = C (when percentage >= 40 and percentage < 50)
Grade = D (when percentage >= 30 and percentage < 40)
Grade = E (when percentage >= 20 and percentage < 30)

Code:

```
#include <iostream>
using namespace std;
int main()
{
double p;
char g;
cout << "Enter Percentange = ";
cin >> p;
if(p>=60)
{
g = 'A';
cout<<"Grade "<< g;
}
else
if((p>=50)&&(p<60))
{
g = 'B';
cout<<"Grade "<< g;
}
else
if((p>=40)&&(p<50))
```

```
{
g = 'C';
cout<<"Grade "<< g;
}
else
if((p>=30)&&(p<40))
{
g = 'D';
cout<<"Grade "<< g;
}
else
if((p>=20)&&(p<30))
{
g = 'E';
cout<<"Grade "<< g;
}
return 0;
}
```

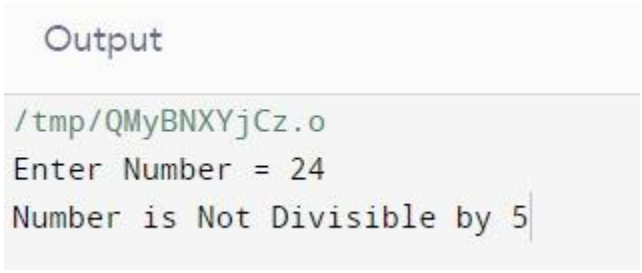
Output

```
/tmp/QMyBNXYjCz.o
Enter Percentange = 78
Grade A
```

17. WAP to check whether a number is divisible by 5.

Code:

```
#include <iostream>
using namespace std;
int main()
{
int a,b;
cout << "Enter Number = ";
cin >> a;
if((a%5)==0)
{
cout<<"Number is Divisible by 5";
}
else
{
cout<<"Number is Not Divisible by 5";
}
return 0;
}
```

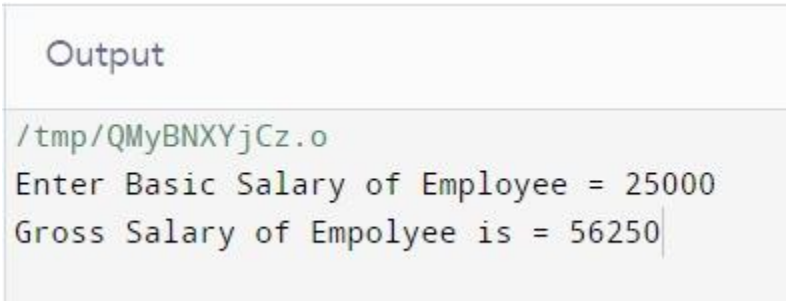


18. WAP to input basic salary of an employee and calculate its Gross salary according to following: Basic Salary <= 10000 : HRA = 20%, DA = 80% Basic Salary <= 20000 : HRA = 25%, DA = 90% Basic Salary > 20000 : HRA = 30%, DA = 95%

Code:

```
 #include <iostream>
using namespace std;
int main()
{
float BSal ,HRA ,DA ,GrossSal;
cout << "Enter Basic Salary of Employee = ";
cin >> BSal ;
if(BSal<=10000)
{
HRA = BSal*0.2;
DA = BSal*0.8;
GrossSal = BSal + HRA + DA ;
cout << "Gross Salary of Empolyee is = " << GrossSal ;
}
else
if((BSal<=20000)&&(BSal>10000))
{
HRA = BSal*0.25;
DA = BSal*0.9;
GrossSal = BSal + HRA + DA ;
cout << "Gross Salary of Empolyee is = " << GrossSal ;
}
else
if(BSal>20000)
{
HRA = BSal*0.3;
DA = BSal*0.95;
GrossSal = BSal + HRA + DA ;
```

```
cout << "Gross Salary of Empolyee is = " << GrossSal ;
}
return 0;
}
```



19. WAP to input electricity unit charges and calculate total electricity bill according to the given condition: For first 50 units Rs. 0.50/unit For next 100 units Rs. 0.75/unit For next 100 units Rs. 1.20/unit For unit above 250 Rs. 1.50/unit An additional surcharge of 20% is added to the bill

Code:

```
#include <iostream>
using namespace std;
int main()
{
float a,b;
cout << "Enter Number Of Units = ";
cin >> a;
if (a<=50)
{
b = (0.50*a);
cout << "Electricity Bill is = " << b ;
}
else
```

```
if ((a>50)&&(a<=150))
{
b = (0.75*a);
cout << "Electricity Bill is = " << b;
}
else
if ((a>150)&&(a<=250))
{
b = (1.20*a);
cout << "Electricity Bill is = " << b;
}
else
if (a>250)
{
b = (1.50*a)+ (0.20*a);
cout << "Electricity Bill is = " << b;
}
return 0;
}
```

Output

```
/tmp/QMyBNXYjCz.o
Enter Number Of Units = 124
Electricity Bill is = 93
```