Sreenidhi University

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2024_28_CPP Programming Lab_CSE A

2028_SUH_CPP_COD_Cycle 2

Attempt : 1
Total Mark : 50
Marks Obtained : 50

Section 1 : Coding

1. Problem Statement

Write a program that takes the radius of a circle as input and calculates its area and circumference. The program should display the results clearly.

Formulae:

Area of a circle: Area = π × radius2

Circumference of a circle: Circumference = 2 × π × radius

Use π ≈ 3.14159.

Answer

```
// You are using GCC
#include <iostream>
#include <iomanip>
```

```
using namespace std;
int main() {
    double r,area,cir;
    cin>>r;
    area=3.14159*r*r;
    cir=2*3.14159*r;
    cout<<fixed<<setprecision(2)<<area;
    cout<<endl<<cir;
    return 0;
}
```

Status : Correct ***Marks : 10/10***

2. Problem Statement

Write a program that takes the radius of a sphere as input and calculates its volume. The program should display the result in a clear format.

Formula:

Area of a sphere: Area = (4/3) x π x radius3

Use π ≈ 3.14159.

Answer

```
// You are using GCC
#include <iostream>
#include <iomanip>
using namespace std;
int main (){
   double r,vol;
   cin>>r;
   vol=4.0/3.0*3.14159*r*r*r;
   cout<<fixed<<setprecision(2)<<vol;
   return 0;


}
```

Status : Correct ***Marks : 10/10***

3. Problem Statement

Write a program that takes a right circular cone's base radius and height as input and calculates its lateral surface area. The program should display the result.

Formula:

Lateral Surface Area: Area = π x radius x slant height

Slant height = √ radius2 + height2

Use π ≈ 3.14159.

Answer

```
// You are using GCC
#include<iostream>
#include<iomanip>
#include<math.h>
using namespace std;
int main() {
    double r,h,sl,lsa;
    cin>>r>>h;
    sl=sqrt(r*r+h*h);
    lsa=3.14159*r*sl;
    cout<<fixed<<setprecision(2)<<lsa;
    return 0;


}
```

Status : Correct ***Marks : 10/10***

4. Problem Statement

Write a program that takes the cost price and profit percentage of an item as input and calculates its selling price. The program should display the result in a clear format.

Formula:

Selling Price = Cost Price + ((Profit Percentage/100) x Cost Price)

Answer

```
// You are using GCC
#include<iostream>
#include<iomanip>
using namespace std;
int main () {
    double cp,pp,sp;
    cin>>cp>>pp;
    sp=cp+((pp/100)*cp);
    cout<<fixed<<setprecision(2)<<sp;
    return 0;
}
```

Status : Correct ***Marks : 10/10***

5. Problem Statement

Write a program that takes the principal amount, time (in years), and annual interest rate as input and calculates the simple interest. The program should display the result in a clear format.

Formula:

Interest = (Principal x Rate x Time) / 100

Answer

```
// You are using GCC
#include<iostream>
#include<iomanip>
using namespace std;
int main(){
    double p,r,t,I;
    cin>>p>>r>>t;
    I=(p*r*t)/100;
    cout<<fixed<<setprecision(2)<<I;
```

```
    return 0;
}
```

Status : Correct ***Marks : 10/10***