Week-2

5. Overloading area () to calculate area of various shapes based on arguments.  
  
  
#include<iostream>

using namespace std;

#include<cmath>

#define pi 3.14159

int area(int a);

float area(float a);

double area(double a);

int area(int h,int b);

float area(float h,float b);

double area(double r,double h);

double area(double r,double h,bool IsCone);

int main(){

// a=side b=base h=height r=radius

int side,height,breath;

float a,b,h;

double radius,l\_height;

char what;

cout<<"What area you want to find?"<<endl;

cout<<"For Square press S"<<endl;

cout<<"For Cube press c"<<endl;

cout<<"For Circle press C"<<endl;

cout<<"For Rectangle press R"<<endl;

cout<<"For Triangle press T"<<endl;

cout<<"For Cylinder press I"<<endl;

cout<<"For Cone press O"<<endl;

cin>>what;

switch (what)

{

case 'S':

cout<<"Enter value of a side ";cin>>side;

cout<<area(side);

break;

case 'c':

cout<<"Enter value of a side ";cin>>a;

cout<<area(a);

break;

case 'C':

cout<<"Enter value of a Radius ";cin>>radius;

cout<<area(radius);

break;

case 'R':

cout<<"Enter value of a Height "<<endl;cin>>height;

cout<<"Enter value of a Breath "<<endl;cin>>breath;

cout<<area(height,breath);

break;

case 'T':

cout<<"Enter value of a Base "<<endl;cin>>b;

cout<<"Enter value of a Height "<<endl;cin>>h;

cout<<area(h,b);

break;

case 'I':

cout<<"Enter value of a Radius "<<endl;cin>>radius;

cout<<"Enter value of a Height "<<endl;cin>>l\_height;

cout<<area(radius,l\_height);

break;

case 'O':

cout<<"Enter value of a Radius "<<endl;cin>>radius;

cout<<"Enter value of a Height "<<endl;cin>>l\_height;

cout<<area(radius,l\_height,true);

break;

default:

cout<<"invalid Input";

break;

}

}

int area(int a){

int area=(pow(a,2));

return area;

}

float area(float a){

float area=(pow(a,3));

return area;

}

double area(double a){

double area=pi\*(pow(a,2));

return area;

}

int area(int h,int b){

int area=b\*h;

return area;

}

float area(float h,float b){

float area=(0.5)\*b\*h;

return area;

}

double area(double r,double h){

double area=(2\*pi\*r\*(r + h));

return area;

}

double area(double r,double h,bool IsCone){

double l=sqrt((pow(r,2))+(pow(h,2))),area=((pi\*r\*l)+(pi\*(pow(r,2))));

return area;

}