**Code:**

import java.util.Scanner;  
import static java.lang.Math.\*;  
class Shape  
{  
 public String shape;  
 Shape()  
 {  
 shape = null;  
 }  
 Shape(String shape)  
 {  
 this.shape = shape.toLowerCase();  
 }  
 double area(double dimension1, double dimension2, double dimension3)  
 {  
 if(shape.equals("triangle"))  
 {  
 double s = (dimension1 + dimension2 + dimension3) / 2;  
 double area = sqrt(s \* (s - dimension1) \* (s - dimension2) \* (s - dimension3));  
 return area;  
 }  
 System.out.println("Cannot calculate Area for such Shape");  
 return 0;  
 }  
 double area(double dimension1)  
 {  
 double result;  
 switch(shape)  
 {  
 case "circle":  
 result = PI \* dimension1 \* dimension1;  
 break;  
 case "square":  
 result = dimension1 \* dimension1;  
 break;  
 case "triangle":  
 result = area(dimension1, dimension1, dimension1);  
 break;  
 case "rectangle":  
 result = area(dimension1, dimension1);  
 default:  
 System.out.println("Your shape isn't present in the list of shapes");  
 result = 0;  
 }  
 return result;  
 }  
 double area(double dimension1, double dimension2)  
 {  
 return dimension1 \* dimension2;  
 }  
}  
class Overloading  
{  
 public static void main(String args[])  
 {  
 Shape shape1 = new Shape("triangle");  
 Shape shape2 = new Shape("square");  
 System.out.println("Area of Triangle with side 10, 11 and 10: " + shape1.area(10, 11, 10));  
 System.out.println("Area of Square with side 10: " + shape2.area(10));  
 shape2.shape = "circle";  
 System.out.println("Area of Circle with side 10: " + shape2.area(10));  
 shape2.shape = "triangle";  
 System.out.println("Area of Equilateral Triangle with side 10: " +shape2.area(10));  
 }  
}

**Output:**

Area of Triangle with side 10, 11 and 10: 45.934055993347684  
Area of Square with side 10: 100.0  
Area of Circle with side 10: 314.1592653589793  
Area of Equilateral Triangle with side 10: 43.30127018922193