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```
abstract class Shape
{
double dim1;
double dim2;
Shape(double a,double b)
{
dim1=a;
dim2=b;
}
abstract double area();
}
class Rectangle extends Shape
{
    Rectangle(double a, double b)
    {
        super(a,b);
    }
    double area()
    {
System.out.println("inside area for rectangle:");
return dim1 * dim2;
    }
}
class Triangle extends Shape
{
    Triangle(double a, double b)
    {
        super (a,b);
    }
    double area()
    {
        System.out.println("inside area for triangle:");
        return dim1 * dim2 /2;
```

```
        System.out.println("inside area for triangle:");
        return dim1 * dim2 /2;
    }
}
class Circle extends Shape
{
    Circle(double a)
    {
        super (a,a);
    }
    double area()
    {
        System.out.println("inside area for circle:");
        return 3.14 * dim1 * dim1;
    }
}
public class AbstractAreas
{
    public static void main (String args[])
    {
        Rectangle r = new Rectangle(9,5);
        Triangle t = new Triangle(10,8);
        Circle c = new Circle(7);
        Shape shapef;
        shapef=r;
        System.out.println("Area is:"+shapef.area());
    shapef=t;
        System.out.println("Area is:"+shapef.area());
    shapef=c;
      System.out.println("Area is:"+shapef.area());
    }
}
```

Result

```
$javac AbstractAreas.java

$java -Xmx128M -Xms16M AbstractAreas
inside area for rectangle:
Area is:45.0
inside area for triangle:
Area is:40.0
inside area for circle:
Area is:153.86
```