4) Develop a Java program to create an abstract class named Shape that contains two integers and an empty method name printArea(). Provide three classes named Rectangle, Triangle and circle such that each one of the class extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

```
import java.util.Scanner;
abstract class Shape
{
  int l,b; double a;
  Scanner ss=new Scanner(System.in);
   Shape()
  { System.out.println("enter l:");
    l = ss.nextInt();
     System.out.println("enter b:");
    b = ss.nextInt();

  }
  void printArea()
      {
      }
}

class Rectangle extends Shape
{
   void printArea()
   {
      a = l*b;
      System.out.println("Area:" + this.a);
   }
}
class Triangle extends Shape
{
   void printArea()
      {
        a = 0.5*l*b;
        System.out.println("Area:" + this.a);
      }
}
```

```
class Circle extends Shape
{
    void printArea()
    {
        area = 3.14 * l * l;
        System.out.println("area:" + this.a);
    }
}
class Shapedemo
{
    public static void main (String[] args)
    {
        Rectangle r = new Rectangle();
        Triangle t = new Triangle();
        Circle c = new Circle();
        r.printArea();
        t.printArea();
        c.printArea();
    }
}
```

Output:

```
Enter l: 3
Enter b: 4
Enter l: 6
Enter b: 8
Enter l: 2
Enter b: 8
Area is : 12.0
area is : 24.0
area is: 12.56.
```

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```
import java.util.Scanner;
abstract class Shape
{
   int l,b;
   double a;
   Scanner ss=new Scanner(System.in);
   Shape()
   {
   System.out.println("enter l:");
   l=ss.nextInt();
   System.out.println("enter b:");
   b=ss.nextInt();
   }
   void printArea()
   {

   }
}
class Rectangle extends Shape
{

   void printArea()
   {
      a=l*b;

      System.out.println("area is :"+this.a);
}
   }


class Triangle extends Shape
{
   void printArea()
   {
      a=0.5*l*b;
      System.out.println("area is :"+this.a);
   }

}
class Circle extends Shape
{
   void printArea()
   {
      a=3.14*l*l;
      System.out.println("area is :"+this.a);
   }

}
```

```
public class main
{
   public static void main(String[] args)
   {
    //Shape s1=new Shape();
    Rectangle s2=new Rectangle();
    Triangle s3=new Triangle();
    Circle s4=new Circle();
    //s1.printArea();
    s2.printArea();
    s3.printArea();
    s4.printArea();
   }
}
```