13) Create a java program ? to create an abstract class named shape that contains two integers) and on empty method named print Area (). Provide these classes named rectangle, triangle, circle such that one of the classes extends the class shape. Each one of the classes contain only the method printArea () that prints the area of the given shape.

```java
abstract class shape {
    int dim1, dim2;

    public shape (int dim1, int dim2) {
        this dim1 = dim1;
        this dim2 = dim2;
    }

    abstract void printArea();
}

class Rectangle extends shape {
    public rectangle (int length, int breadth) {
        super (length, breath);
    }

    void printArea () {
        int area = dim1 * dim2;
        System.out.println (" Area of Rectangle :" + area)
    }
}
```

```java
class Triangle extends Shape {
    public Triangle (int base, int height) {
        super (base, height);
    }

    void printArea () {
        double area = 0.5 * dim1 * dim2;
        System.out.println (" Area of the Triangle : " + area);
    }
}

class Circle extends Shape {
    public Circle (int radius ) {
        super (radius, 0);
    }

    void printArea () {
        double area = Math.PI * dim1 * dim1;
        System.out.println ("Area of circle : " + area);
    }
}

public class AreaMain {
    public static void main (String[] args) {
        Shape rectangle = new rectangle ( 10, 8 );
        Shape Triangle  = new triangle (10,5);
        Shape Circle    = new circle (7);
```

```
rectang  = print Area ();
triangle = print Area ();
circle   = print Area ();
      }
   }
}
```

output:

Area of rectangle : 32.0
Area of triangle : 9.0
Area of circle : 50.24
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22.10

```
C:\Windows\System32\cmd.exe

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C:\Users\Admin\Downloads>javac Main.java

C:\Users\Admin\Downloads>java Main
Area of rectangle: 32.0
Area of triangle: 9.0
Area of circle: 50.24
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C:\Users\Admin\Downloads>
```