

4) Develop a java program to create an abstract class named Shape that contains 2 integers & an empty method named printArea(). Provide 3 classes named Rectangle, Triangle and Circle such that each one of the classes extends to 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;
```

```
class InputScanner {  
    Scanner s;  
    InputScanner() {  
        s = new Scanner(System.in);  
    }  
}
```

```
abstract class Shape extends InputScanner {  
    double a;  
    double b;  
    abstract void getDetails();  
    abstract void printArea();  
}
```

```
class Rectangle extends Shape {  
    void getDetails() {  
        System.out.println("Enter length and  
        breadth");  
        a = s.nextDouble();  
        b = s.nextDouble();  
    }  
}
```



```
void printArea() {  
    System.out.println("Area of Rectangle =  
    " + (a * b));  
}
```

```
class Triangle extends Shape {
```

```
    void getDetails() {
```

```
        System.out.println(x: "Enter a and b")
```

```
        a = s.nextDouble();
```

```
        b = s.nextDouble();
```

```
    }
```

```
    void printArea() {
```

```
        System.out.println("Area of Triangle =  
        " + (a * b / 2));
```

```
    }
```

```
}
```

```
class Circle extends Shape {
```

```
    void getDetails() {
```

```
        System.out.println(x: "Enter radius");
```

```
        a = s.nextDouble();
```

```
    }
```

```
    void printArea() {
```

```
        System.out.println("Area of Circle = "  
        + (3.14 * a * a));
```

```
    }
```

```
}
```



```

class AbstractMain {
    public static void main(String[] args) {
        System.out.println("SHREE SANIKET USN: IBM22C126");
        Rectangle r = new Rectangle();
        Triangle t = new Triangle();
        Circle c = new Circle();
        r.getDetails();
        r.printArea();
        t.getDetails();
        t.printArea();
        c.getDetails();
        c.printArea();
    }
}

```

Output: SHREE SANIKET USN: IBM22C126

Enter length and breadth

20

30

Area of Rectangle = 600.0

Enter a and b

Enter a and b

20

20

Area of Triangle = 200.0

Enter radius

15

Area of Circle = 706.5

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