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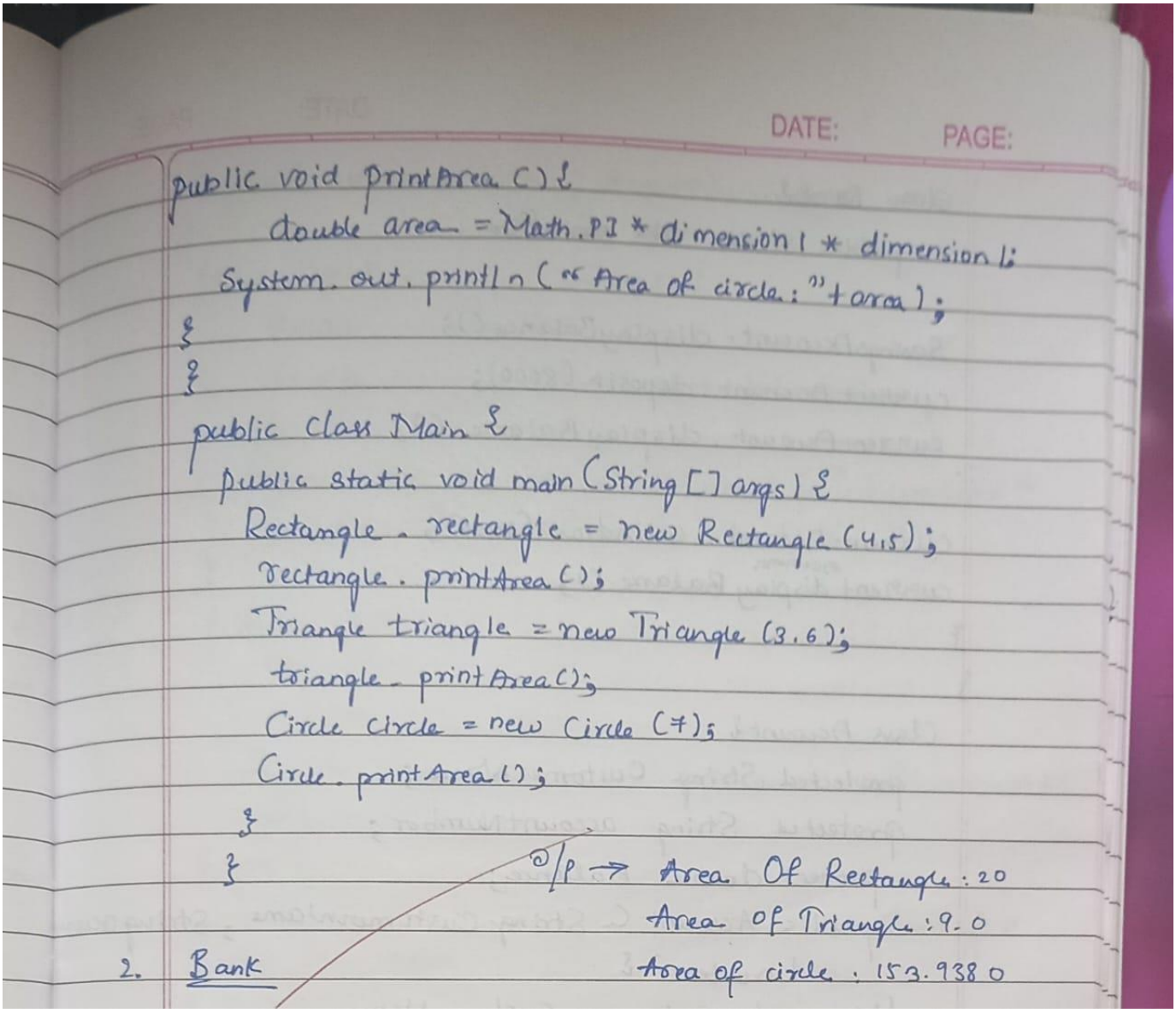
1. abstract Class

```
Abstract class Shape {
    protected int dimension1;
    protected int dimension2;
    public Shape (int dimension1, int dimension2){
    this.dimension1 = dimension1;
    this.dimension2 = dimension2;
    }
    public abstract void printArea();
}
Class Rectangle extends Shape {
    public Rectangle (int length, int width){
        super(length, width);
    }
    public void printArea(){
        int area = dimension1 * dimension2;
        System.out.println("Area of Rectangle: "+area);
    }
}
Class Triangle extends Shape{
        public Triangle (int base, int height){
            super(base, height);
        }
        public void printArea(){
            double area = 0.5* dimension1 * dimension2;
            System.out.println("Area of Triangle: "+area);
        }
}
Class Circle extends Shape{
            public Circle (int radius){
                super(radius, 0);
            }
```



AREA CALCULATION - ABSTRACT CLASS

```
import java.util.Scanner;

abstract class Shape{

int a,b;

Shape(int a,int b){

this.a=a;
```

```
this.b=b;
}
public abstract void printArea();
}
class Rectangle extends Shape{
Rectangle(int length,int breadth){
super(length,breadth);
}
public void printArea(){
System.out.println("Area of Rectangle = "+(a*b));
}
}
class Triangle extends Shape{
Triangle(int base,int height){
super(base,height);
}
public void printArea(){
System.out.println("Area of Triangle = "+(0.5*a*b));
}
}
class Circle extends Shape{
Circle(int radius){
super(radius,0);
```

```
}
public void printArea(){
System.out.println("Area of Circle = "+(Math.PI*a*a));
}
}

public class Area {
public static void main(String[] args) {
Scanner sc= new Scanner(System.in);
System.out.println("Enter length and breadth of Rectangle");
int length=sc.nextInt();
int breadth=sc.nextInt();
System.out.println("Enter base and height of Triangle");
int base=sc.nextInt();
```

AREA CALCULATION - ABSTRACT CLASS

```
int height=sc.nextInt();
System.out.println("Enter radiius of a Circle");
int radiius=sc.nextInt();
Rectangle rectangle=new Rectangle(length, breadth);
Triangle triangle=new Triangle(base, height);
Circle circle=new Circle(radiius);
```

```
rectangle.printArea();

triangle.printArea();

circle.printArea();

}

}
```

OUTPUT :

```
Enter length and breadth of Rectangle

10 20

Enter base and height of Triangle

2 5

Enter radiius of a Circle

8

Area of Rectangle = 200

Area of Triangle = 5.0

Area of Circle = 201.06192982974676
```