Question 1:

```java
abstract class shape{
    abstract void RectangleArea(int l,int b);
    abstract void SquareArea(int a);
    abstract void CircleArea(int r);
}
class Area extends shape{
    void RectangleArea(int l,int b){
        System.out.println("Area= "+l*b);
    }
    void SquareArea(int a){
        System.out.println("Area= "+a*a);
    }
    void CircleArea(int r){
        System.out.println("Area= "+3.14*r*r);
    }
}

class q1{
    public static void main(String[] args){
        Area a=new Area();
        System.out.println("For Rectangle");
        a.RectangleArea(5,10);
        System.out.println("For circle");
        a.CircleArea(15);
        System.out.println("For square");
        a.SquareArea(3);
    }
}
```

```
PS D:\oops in java\11092023> javac q1.java
PS D:\oops in java\11092023> java q1
For Rectangle
Area= 50
For circle
Area= 706.5
For square
Area= 9
PS D:\oops in java\11092023>
```

Question 2:

import java.util.Scanner;

interface shape{

   Scanner myin=new Scanner(System.in);

   void getArea();

}

class Rectangle implements shape{

   public void getArea(){

     int l,b;

     System.out.println("Enter L ");

     l=myin.nextInt();

     System.out.println("Enter B ");

     b=myin.nextInt();

     System.out.println("Area= "+l*b);

   }

}

class circle implements shape{

   public void getArea(){

     int r;

     System.out.println("Enter r ");

     r=myin.nextInt();

     System.out.println("Area= "+3.14*r*r);

   }

}

```java
class square implements shape{

    public void getArea(){

        int a;

        System.out.println("Enter A ");

        a=myin.nextInt();

        System.out.println("Area= "+a*a);

    }

}

public class q2 {

    public static void main(String[] args){

        System.out.println("For Rectangle");

        Rectangle r= new Rectangle();

        r.getArea();

        System.out.println("For Circle");

        circle c= new circle();

        c.getArea();

        System.out.println("For square");

        square s= new square();

        s.getArea();

    }

}
```

```
PS D:\oops in java\11092023> javac q2.java
PS D:\oops in java\11092023> java q2
For Rectangle
Enter L
4
Enter B
5
Area= 20
For Circle
Enter r
7
Area= 153.86
For square
Enter A
5
Area= 25
```

Question 3:

```java
import java.util.Scanner;
class shape{
    Scanner myin=new Scanner(System.in);
    void getPerimeter(){
        int a;
        System.out.println("Enter a");
        a=myin.nextInt();
        System.out.println("perimeter= "+4*a);
    }
    void getArea(){
        int a;
        System.out.println("Enter a");
        a=myin.nextInt();
        System.out.println("Area= "+a*a);
    }
}

class circle extends shape{
    void getPerimeter(){
        int r;
        System.out.println("Enter r");
        r=myin.nextInt();
        System.out.println("perimeter= "+3.14*r*2);
    }
    void getArea(){
        int r;
        System.out.println("Enter r");
        r=myin.nextInt();
        System.out.println("perimeter= "+3.14*r*r);
    }
    void properties(){
```

```java
        getPerimeter();

        super.getArea();

    }

}


public class q3 {

    public static void main(String[] args){

        circle c=new circle();

        c.properties();

    }

}
```

```
PS D:\oops in java\11092023> javac q3.java
PS D:\oops in java\11092023> java q3
Enter r
7
perimeter= 43.96
Enter a
5
Area= 25
PS D:\oops in java\11092023>
```