```java
package ex6;

import java.util.Random;

/**
 *
 * @author Van Ting <vanting at gmail.com>
 */
public class BuggyClass {

    private static Random rand =
            new Random(System.currentTimeMillis());

    // trouble function here
    public static void buggyMethod() throws Exception {

        if(rand.nextBoolean()) {
            Exception ex = new Exception("Something wrong");
            throw ex;
        }
        else
            return;
    }

}

```



```java
package ex6;

public class CircleWithException {

    /** The radius of the circle */
    private double radius;
    /** The number of the objects created */
    private static int numberOfObjects = 0;

    /** Construct a circle with radius 1 */
    public CircleWithException() {
        this(1.0);
    }

    /** Construct a circle with a specified radius */
    public CircleWithException(double newRadius) {
        setRadius(newRadius);
        numberOfObjects++;
    }

    /** Return radius */
    public double getRadius() {
        return radius;
    }

    /** Set a new radius */
    public void setRadius(double newRadius) throws IllegalArgumentException {
        if (newRadius >= 0) {
            radius = newRadius;
        } else {
            throw new IllegalArgumentException("Radius cannot be negative");
        }
    }

    /** Return numberOfObjects */
    public static int getNumberOfObjects() {
        return numberOfObjects;
    }

    /** Return the area of this circle */
    public double findArea() {
        return radius * radius * 3.14159;
    }
}

```

```java
package ex6;

import java.util.Scanner;

public class ExceptionDemo {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter an integer: ");
        int number = 0;

        number = scanner.nextInt();

        // Display the result
        System.out.println("The number entered is " + number);

    }
}

```



```java
package ex6;

import java.util.*;

public class HandleExceptionDemo {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    boolean continueInput = true;

    do {

      try {
        System.out.print("Enter an integer: ");
        int number = scanner.nextInt();

        // Display the result
        System.out.println("The number entered is " + number);

        continueInput = false;      // terminate loop
      }
      catch (InputMismatchException ex) {
        System.out.println("Try again. (Incorrect input: an integer is required)");
        scanner.nextLine();     // discard the incorrect input
      }

    } while (continueInput);
  }
}

```

```java
package ex6;

import java.io.IOException;

/**
 *
 * @author Van Ting <vanting at gmail.com>
 */
public class TestBuggyClass {

    public static void main(String[] args) {

        try {
            // open file
            BuggyClass.buggyMethod();


        } catch (IOException ex) {
            System.out.println(ex.getMessage());
        } catch (Exception ex) {
            System.out.println(ex.getMessage());
        } finally {
            // close file
        }

    }

}

```



```java
package ex6;

public class TestCircleWithException {

    /** Main method */
    public static void main(String[] args) {
        try {
            CircleWithException c1 = new CircleWithException(5);
            CircleWithException c2 = new CircleWithException(-5);
            CircleWithException c3 = new CircleWithException(0);
        } catch (IllegalArgumentException ex) {
            System.out.println(ex);
        }

        System.out.println("Number of objects created: " +
CircleWithException.getNumberOfObjects());
    }
}


```