CS 103

ÖZYEĞİN ÜNİVERSİTESİ

LAB 07

Name:

ID:

Section:

1. Write a program, Circle.java, which calculates area and circumference of a circle with two methods which are getArea() and getCircumference(). Radius of circle is read as input from console and passed as a parameter to both methods. The calculated area and c'rcumference is to be returned to and printed by main method (Hint use Math.PI and Math.pow accordingly) Here is the possible output.

OUTPUT:

The area of a circle is: 28.274333882308138

The circumference of a circle is: 18.84955592153876

2. Create a class called 'PrimeNumbers' having a method called 'isPrimeNumber' which takes 'int' as argument and returns a boolean value(i.e. true if number is a prime and false otherwise). Call this method from the main method to list all prime numbers from 1 to 100.

OUTPUT:

Prime numbers until 100

2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97

3. Write a method called `printTriangleType`. This method accepts three integer arguments, using a scanner object, representing the lengths of the sides of a triangle and prints the type of triangle that these sides form. Here are some sample calls to printTriangleType from main method:

```
printTriangleType(5, 7, 7);
printTriangleType(6, 6, 6);
printTriangleType(5, 7, 8);
```

The output produced by these calls should be

```
isosceles
equilateral
scalene
```

Your method should shall print "illegal triangle" if passed invalid values, such as ones where one side's length is longer than the sum of the other two, which is impossible in a triangle. For example, the call of `printTriangleType(2, 18, 2);` shall print "illegal triangle".

NOTE: You shall use appropriate logical operators (&&, ||, !) to combine different conditions in an if statement.

4. A palindrome is a word that reads the same backwards as forwards such as Madam or racecar or the number 10201. Create a class called 'Palindrome'. In the main method, you are required to use Scanner and get string input from the user. Then, create a method called 'isPalindrome' which takes 'String' as argument and returns whether the input is palindrome or not. Call input string to decide whether taken input is palindrome or not. (Note: A character being lower case or upper case is not important)

   More palindrome examples:

   Level, rotator, Refer, Aoxomoxoa, Step on no pets