North South University
CSE-215L (Programming Language II)
Summer'21, Mid
Section- 6
Total- 40, Time: 60 min

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1. Write a Java class **Complex** to add and multiply two complex numbers. Your class must have the following features:
   - Instance variables: real and imaginary (double type) [Instance variables must be private]
   - Constructor: public Complex ()
     public Complex (double real, double imaginary)
   - Instance methods: public Complex add ()
     public Complex multiply ()
     public void setReal ()
     public void setImaginary ()
     public double getReal()
     public double getImaginary()
     public String toString()

   Write a separate class **Print** with a main() method and test the Complex class methods. [The standard format for complex numbers is a + bi].

2. Print the following pattern:

```
*
+++
*****
+++++++
*********
```

3. Create a class to print an integer and a character with two methods having the same name but different sequence of the integer and the character parameters. For example, if the parameters of the first method are of the form (int n, char c), then that of the second method will be of the form (char c, int n).

4. Write a program to print the factorial of a number by defining a method named **Factorial.**

Hints: Factorial of any number n is represented by n! and is equal to 1*2*3*...*(n-1)*n. E.g.-
4! = 1*2*3*4 = 24
3! = 3*2*1 = 6
2! = 2*1 = 2
Also,
1! = 1
0! = 0