

Programming 1

Notice: Your ID and name should be printed before the outputs of all programs.

1. Write a program that calculates the area of circle using it's radius. The following is an example.

Please enter the radius of a circle: 19

Area of a circle is 1134.114947

2. Write a JAVA program that orders an array of integer in descending order using bubble sort algorithm. You can refer the followings as an example of output.

Array Before Bubble Sort

5 90 35 45 150 3

Array After Bubble Sort

150 90 45 35 5 3

3. Write a JAVA program that generates Pyramid for given number example. Some output examples are given as follows.

Enter Number:

5

Enter X:

1

0

1 2

3 4 5

6 7 8 9

10 11 12 13 14

Enter Number:

5

Enter X:

2

0

2 4

6 8 10

12 14 16 18

20 22 24 26 28

Enter Number:

5

Enter X:

3

0

3	6			
9	12	15		
18	21	24	27	
30	33	36	39	42

4. Write a program that simulates rolling a pair of dice. You can simulate rolling one die by choosing one of the integers 1, 2, 3, 4, 5, or 6 at random. The number you pick represents the number on the die after it is rolled. The expression

```
(int)(Math.random()*6) + 1
```

does the computation you need to select a random integer between 1 and 6. You can assign this value to a variable to represent one of the dice that are being rolled. Do this twice and add the results together to get the total roll. Your program should report the number showing on each die as well as the total roll. For example:

The first die comes up 3

The second die comes up 5

Your total roll is 8

5. Given three integers, a b c, write a class that returns true if two or more of them have the same rightmost digit. (The integers are non- negative.) Write a test code that runs your class, and verify it.

```
lastDigit(23, 19, 13) → true
```

```
lastDigit(23, 19, 12) → false
```

```
lastDigit(23, 19, 3) → true
```

6. Write a program that asks the user's name, and then greets the user by name. Before outputting the user's name, convert it to upper case letters.

For example, if the user's name is Fred, then the program should respond "Hello, FRED, nice to meet you!".