

Akdeniz University
Computer Engineering Department
CSE101L - Computer Programming Laboratory

Week-1 Programming Exercises

by

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"Simplicity, carried to the extreme, becomes elegance"
- Jon Franklin

Disclaimer

You will submit your file to an assignment that is given through MS teams. Your file-name should be *Ex01_yourStudentNumber.java*. Submissions made after the deadline will not be accepted, be sure to submit your work before the due date and make sure to click turn in button. Your code will be automatically controlled, so be sure to have only one public class in your file that has the same name with your file. Failure to do so may result in you receiving 0 from this exercise. You will turn in a single java file.

Exercises

1. Write a program that displays the following table on console:

a	a^2	a^3
1	1	1
2	4	8
3	9	27
4	16	64

2. Write a program that displays the result of:

$$\frac{9.5 \times 4.5 - 2.5 \times 3}{45.5 - 3.5}$$

3. π can be computed using the following formula:

$$\pi = 4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \dots \right)$$

Write a program that displays the result of:

$$4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11}\right)$$

and

$$4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13}\right)$$

4. Write a program that displays the area and perimeter of a circle that has a radius of 5.5 using the π you have calculated in question.

5. You can use Cramer's rule to solve the following 2×2 system of linear equation:

$$ax + by = e$$

$$cx + dy = f$$

$$x = \frac{ed - bf}{ad - bc}, y = \frac{af - ec}{ad - bc}$$

Write a program that solves the following equation and display the value for x and y . Then calculate e and f by using the x and y .

$$\begin{cases} 3.4x + 50.2y = 44.5 \\ 2.1x + .55y = 5.9 \end{cases}$$