

**WIX1002 Fundamentals of Programming**  
**Lab Report 1**

1. Write a program that simulates a calculator. It reads three integers and two characters.

X	Multiplication of two numbers
D	Quotient of two numbers
M	Remainder of two numbers
A	Addition of two numbers
S	Subtraction of two numbers

The sequence of operand should follow this order X D M A S.

Sample Input	Sample Output
Enter three integer number: 30 5 7 Enter two operands: A X	30 A 5 X 7 = 65
Enter three integer number: 6 2 3 Enter two operands: D M	6 D 2 M 3 = 0

2. Write a simple two players dice game. Each player will roll the dice twice and the player with the highest score wins the game. You need to follow the special rules as stated below.

Rules	Score
If first and second dice value are 6	No score but can roll the dice twice.
If first and second dice value are 1	No score but multiply the existing score by 2.
If first and second dice value are both odd number and not both 1.	No score and -5 from the existing score

3. Cramer's rule is used to solve the linear equations.

$$ax+by=e, cx+dy=f; x = (ed-bf)/(ad-bc) \quad y=(af-ec)/(ad-bc)$$

Write a program that ask the user to enter two input line in the format of  $ax+by=e$  and  $cx+dy=f$ . Display the result of  $x$  and  $y$ . If  $ad - bc$  is equal to 0. Display "The equation has no solution". Given the value of  $a, b, c, d$  is (1-9).

Sample Input	Sample Output
Enter Input Line 1: $1x+2y=8$ Enter Input Line 2: $2x+9y=26$	$x=4$ $y=2$
Enter Input Line 1: $3x-5y=-14$ Enter Input Line 2: $4x+3y=20$	$x=2$ $y=4$

### Lab Report

Prepare a report to solve the above problems. The report should contain all the sections as below for each question:

No	Section	Description
1	Problem	Description on the problem
2	Solution	Explanation on how to solve the above problems
3	Sample Input & Output	A few sets of input and output (snapshot)
4	Source Code	Java Source Code

### Requirements

1. Group Assignment (4-5 students per group)
2. Cover page that includes all student matric number and full name.
3. Font: Times New Roman 12, Line Spacing: 1 ½ Spacing
4. Due Date: 27/11/2020
5. The method of submission is based on your group lecturer.