



### Instructions:

- 1- Create a folder with your full name on the desktop.
- 2- Create 12 Text Documents inside the folder and name them Q1, Q2 ... Q12.
- 3- Save your codes inside the Text Documents.

**Q1.** Write a C++ program that asks the user to input two numbers and displays their multiplication, division, sum, and subtraction.

```
Please enter first number: 9
Please enter second number: 3
9 * 3 = 27
9 / 3 = 3
9 + 3 = 12
9 - 3 = 6
```

**Q2.** Write a C++ program that allows the user to calculate the total marks (quizzes out of 20%, mid-term exam out of 30%, and final exam out of 50%).

```
Enter your quiz marks: 15
Enter your midterm mark: 23
Enter your final mark: 43
Your total mark is 81
```

**Q3.** Write a C++ program that is printing the corresponding ASCII of each letter of your name. (Ex: Znar -> int('Z'), int('n'), int('a'), int('r')).

```
90
110
97
114
```

**Q4.** Create a C++ program that asks the user for the total study hours and study days per week, then calculates and displays the average study hours per day.

```
Enter the total number of hours you study: 15
Enter the number of days you study in a week: 5

You should study an average of 3 hours per day.
```



**Q5.** Write a C++ program that asks the user to input a full name and three quiz marks. Then, calculate the average of the quizzes and print the name and average quiz mark as follows:

```
Enter your full name: Kardo Ali Mustafa  
Enter quiz 1: 3  
Enter quiz 2: 5  
Enter quiz 3: 4  
-----  
Your full name is Kardo Ali Mustafa  
Your quizzes average mark is 4
```

**Q6.** Write a C++ program that lets the user enter two numbers, then finds the result of this equation:  $\frac{(a^2+b^2)}{2ab}$

```
Enter the first number (a): 3  
Enter the second number (b): 5  
  
The result is: 1.13
```

**Q7.** Write a C++ program that generates 3 random numbers:

- 1<sup>st</sup> random number -> No limitation
- 2<sup>nd</sup> random number -> 0 – 99
- 3<sup>rd</sup> random number -> 5 – 40

```
First random number -> 3812  
Second random number -> 82  
Third random number -> 32
```

**Q8.** Write a C++ program that generates two random numbers between two user-defined values (min and max), displays the random numbers, calculates the sum, and displays it.

```
Enter min: 20  
Enter max: 50  
  
First random number is: 31  
Second random number is: 23  
The sum is: 54
```



**Q9.** Write a C++ code that generate 3 random numbers between 1 - 100 and find the average of these random numbers.

First random number is: 81  
Second random number is: 5  
Third random number is: 63  
  
The average is: 49.6

**Q10.** Write a C++ program that takes the prices of three items and the discount from the user, then outputs the total price before and after the discount.

Enter 1<sup>st</sup> item price: **20**  
Enter 2<sup>nd</sup> item price: **5**  
Enter 3rd item price: **17**  
Total is: 42  
Enter discount %: **15**  
The total after discount is: 35.7

**Q11.** Write a C++ program to generate four random integers within a specific range and display them. Then, multiply the first random number by the third and divide the second by the fourth. The random number range must be the same as shown below.

- 1) Between 7 to 13
- 2) Between 80 to 102
- 3) Between 63 to 82
- 4) Between 23 to 47

First random number is: 7  
Second random number is: 100  
Third random number is: 64  
Fourth random number is: 25  
 $7 * 64 = 448$   
 $100 / 25 = 4$

**Q12.** Write a C++ program that generates two random numbers between 1 and 10 and displays a simple multiplication question (e.g., 'What is 7 x 5?'), and the user should provide the answer.

What is 3 x 8?  
Enter the answer: **24**