

## Lab work – counter while loop

1. Write a C++ program that

- Outputs the sum and product of all integers from 1 up to user input.

Example: If a user enters 4, output would be:

The sum is: 10

The product is: 24

2. Write a program that: (Use compound operators `||` && to combine two condition checks in one if statement)

- Asks the user to enter an integer that is greater than 0 and less than 20
- If the entered number is not within the range the program keeps on asking for a valid number
- Otherwise the program prints a table converting miles to kilometers from 1 to the user entered number

Ex:

Enter an integer that is greater than 0 and less than 20: 22

Enter an integer that is greater than 0 and less than 20: 10

Miles	Kilometers
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1	1.609
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2	3.218
---	-------

...

10	16.090
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(Note: You can use tab `'\t'` to line up nicely)

3. Write a program to test whether a number is a prime number.

(Hint: a prime number is not divisible by any number except 1 and itself, so you can use a counter starting from 2 and up to input number – 1, and test each counter number against the input number)

4. Write a program that: (Use compound operators `||` && to combine two condition checks in one if statement)

- Gets an integer from the user
- Checks if the number is divisible by 3 or 5, or both
- Uses compound operators `||` && to combine two conditions and checks in one if statement:
- If the number is divisible by 3, but not 5, output "A factor of 3"
- If the number is divisible by 5, but not 3, output "A factor of 5"
- If the number is divisible by 3 and 5, output "A factor of 3 and 5"