

# Homework: Formatted Input / Output

This document defines the homework assignments from [the "C Programming" Course @ Software University](#). Please submit as homework a single **zip / rar / 7z** archive holding the solutions (source code) of all below described problems.

## Problem 1. Sum of 3 Numbers

Write a program that reads **3 real numbers** from the console and prints their **sum**. Examples:

a	b	c	sum
3	4	11	18.00
-2	0	3	1.00
5.5	4.5	20.1	30.10

## Problem 2. Print Company Information

A company has **name, address, phone number, fax number, web site and manager**. The manager has **first name, last name, age and a phone number**. Write a program that reads the information about a company and its manager and prints it back on the console.

program	user
Company name:	Software University
Company address:	15-18 Tintyava, Sofia
Phone number:	+359 899 55 55 92
Fax number:	
Web site:	<a href="http://softuni.bg">http://softuni.bg</a>
Manager first name:	Svetlin
Manager last name:	Nakov
Manager age:	25
Manager phone:	+359 2 981 981
Software University Address: 26 V. Kanchev, Sofia Tel. +359 899 55 55 92 Fax: (no fax) Web site: <a href="http://softuni.bg">http://softuni.bg</a> Manager: Svetlin Nakov (age: 25, tel. +359 2 981 981)	

## Problem 3. Circle Perimeter and Area

Write a program that reads the radius **r** of a circle and prints its perimeter and area formatted with 2 digits after the decimal point. Examples:

r	perimeter	area
2	12.57	12.57

3.5	21.99	38.48
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## Problem 4. Formatting Numbers

Write a program that reads 3 numbers: an integer **a** ( $0 \leq a \leq 500$ ), a floating-point **b** and a floating-point **c** and **prints them in 4 virtual columns** on the console. Each column should have a width of 10 characters. The number **a** should be printed in **hexadecimal, left aligned**; then the number **a** should be printed in binary form, padded with zeroes, then the number **b** should be **printed with 2 digits after the decimal point, right aligned**; the number **c** should be **printed with 3 digits after the decimal point, left aligned**. Examples:

a	b	c	result
254	11.6	0.5	FE   0011111110   11.6   0.500
499	-0.5559	10000	1F3   0111110011   -0.56   10000.000
0	3	-0.1234	0   0000000000   3   -0.123

## Problem 5. \* Sum of 5 Numbers

Write a program that **enters 5 numbers** (given in a single line, separated by a space), **calculates and prints their sum**. Examples:

numbers	sum
1 2 3 4 5	15.00

numbers	sum
10 10 10 10 10	50.00

numbers	sum
1.5 3.14 8.2 -1 0	11.84

## Problem 6. \* Numbers from 1 to n

Write a program that reads an integer number **n** from the console and prints all the numbers in the interval **[1..n]**, each on a single line. Note that you may need to use a **for-loop**. Examples:

numbers	sum
3	1 2 3

numbers	sum
5	1 2 3 4 5

numbers	sum
1	1

## Problem 7. \* Sum of n Numbers

Write a program that enters a number **n** and after that enters more **n** numbers and calculates and prints their sum. Note that you may need to use a **for-loop**. Examples:

numbers	sum
3 20 60 10	90.0

numbers	sum
5 2 -1 -0.5 4 2	6.5

numbers	sum
1 1	1.0

## Problem 8. \*\* Fibonacci Numbers

Write a program that reads a number **n** and prints on the console the first **n** members of the [Fibonacci sequence](#) (at a single line, separated by spaces) : 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, .... Note that you may need to learn how to use loops. Examples:

n	comments
1	0
3	0 1 1
10	0 1 1 2 3 5 8 13 21 34

## Problem 9. \*\* Numbers in Interval Dividable by Given Number

Write a program that reads two positive integer numbers and prints how many numbers **p** exist between them such that the remainder of the division by 5 is 0. Examples:

start	end	p	comments
17	25	2	20, 25
5	30	6	5, 10, 15, 20, 25, 30
3	33	6	5, 10, 15, 20, 25, 30
3	4	0	-
99	120	5	100, 105, 110, 115, 120
107	196	18	110, 115, 120, 125, 130, 135, 140, 145, 150, 155, 160, 165, 170, 175, 180, 185, 190, 195