# Homework: PHP Flow Control

This document defines homework assignments from the [“PHP & MySQL“ Course @ Software University](https://softuni.bg/trainings/fasttracks/details/1033). Please submit as homework a single zip / 7z archive holding the solutions (source code) of all below described problems.

## Exchange value

Write an if statement that examines two integer variables and exchanges their values if the first one is greater than the second one.

## Show sign

Write a script that shows the sign (+ or -) of the product of three real numbers without calculating it. Use a sequence of if statements.

## Sort numbers

Sort 3 real values in descending order using nested if statements.

## Point in a Circle

Write **an expression** that checks if given point (**x**, **y**) is inside a **circle K**({**0**, **0**}, **2**). Examples:

|  |  |  |  |
| --- | --- | --- | --- |
| **x** | **y** | **inside** |  |
| 0 | 1 | true |
| -2 | 0 | true |
| -1 | 2 | false |
| 1.5 | -1 | true |
| -1.5 | -1.5 | false |
| 100 | -30 | false |
| 0 | 0 | true |
| 0.2 | -0.8 | true |
| 0.9 | -1.93 | false |
| 1 | 1.655 | true |

## Matrix of Numbers

Write a program that reads from the console a positive integer number n (1 ≤ n ≤ 20) and **prints a matrix** like in the examples below. Use two nested loops. Examples:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **n** | **matrix** |  | **n** | **matrix** |  | **n** | **matrix** |
| 2 | 1 2  2 3 | 3 | 1 2 3  2 3 4  3 4 5 | 4 | 1 2 3 4  2 3 4 5  3 4 5 6  4 5 6 7 |

## Odd and Even Product

You are given **n** integers (given in a single line, separated by a space). Write a program that checks whether the product of the odd elements is equal to the product of the even elements. Elements are counted from 1 to n, so the first element is odd, the second is even, etc. Examples:

|  |  |
| --- | --- |
| **numbers** | **result** |
| **2** 1 **1** 6 **3** | yes  product = 6 |
| **3** 10 **4** 6 **5** 1 | yes  product = 60 |
| **4** 3 **2** 5 **2** | no  odd\_product = 16  even\_product = 15 |

## TOTO

Write expression that print all possible combinations from TOTO 6/49.

Hint: Use nested loops.

## Print Prime Numbers

Write expression that print all prime number from 1 to given n.

## Extract words

Write a function that takes as argument an array, and extract all the words from that array without repeating the same ones.

|  |  |
| --- | --- |
| **Array** | **result** |
| **Nakov, Svetlin, Nakov, Pesho,**  **Mario, Dimityr, Georgi, Mario** | Nakov, Svetlin, Pesho, Mario, Dimityr,Georgi |