Student's name:

Information Technology: Short exam 06.11.2014
Group A

Question 1

Write a program that on input takes a vector and an element index. On output the program should produce new vector by excluding the element with given index from the input vector.

Example

input : [3,8,7,23] and 3

output : [3,8,23]

Question 2

Write a program that on input takes two numerical sequences of equal length and on output produces the sequence according to the formula given below:

input : a_i, b_i, $i = 1, ..., N$

output : $c_i = b_i \cdot sin(a_i)$, $i = 1, ..., N$

Question 3

Write a program that checks if two vectors in three dimensional space are orthogonal.

Question 4

A point on the time axis is given by the number of hours and the number of minutes that passed from a specific moment taken as the time start. Write a program that calculates the number of seconds that passes between two points on time axis.

Student name:

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Group B

Question 1

Write a program that checks if two vectors in three dimensional real space are of equal norm (geometric length).

Question 2

Write a program that on input takes two numerical sequences of equal length and on output produces the sequence according to the formula given below:

input : G_k, H_k, $k = 1, ..., M$

output : $W_k = H_k \cdot \sqrt{G_k}$, $k = 1, ..., M$

Question 3

A point on the time axis is given by the number of hours and the number of minutes that passed from a specific moment taken as the time start. Write a program that calculates the number of seconds that passes between two points on time axis.

Question 4

Write a program that on input takes a vector and an element index. On output the program should produce new vector by excluding the element with given index from the input vector.

Example

input : [23, 1, 8, 123, 45] and 2

output : [23,8,123,45]