**Algorithms with Java: Exam 28-06-2020**

This document defines the exam for ["Algorithms – Fundamentals (Java)" course @ Software University](https://softuni.bg/trainings/2991/algorithms-fundamentals-with-java-may-2020). Please submit your solutions (source code) of all below described problems in [Judge](https://judge.softuni.bg/Contests/2484/Algorithms-Fundamentals-with-Java-Exam-28-June-2020).

1. **Alpha Decay**

*There is something radioactive around those Greek letters Alpha, Beta and Gama, however letters are not known radioactive emitters. The real emitters are the heavy elements. Approximately 99% of the helium produced on Earth is the result of the alpha decay of underground deposits of minerals containing uranium or thorium.*

You are part of the **"no-real-science-team"** and you are the computer specialist. As such you will be given data collected after the alpha decay of some heavy elements **N** where **each value** is the resulting nuclei after the alpha decay of some heavier nuclei **represented by a single integer.**

Your head theoretical physicist wants to see if there are any patterns in the resulting nuclei, however after doing some calculations the theorist have claimed that the **only** **number** of results worth looking at is **K** of those **N** nuclei at a time and he is not sure that he will have enough time to do so.

Here comes your task you need to take those **N** nuclei and print **the amount of** **all possible** ways that they can be observed as a **sequence of K nuclei**, **without using the same nucleus twice**. **Order of nuclei is important!** Pair [a, b] is different than pair [b, a].

## Input

* The input will come from the console on two lines.
* First line will be the resulting nuclei after the alpha decay **N** as a sequence of integers separated by spaces.
* On the second line a single integer **K** the count of integers the physicist wants to observe at the same time.

## Output

The output is a single integer, representing the count of all possible ways to observe **K** nuclei out of **N**.

Constraints

* **N** will be in the range **[3…10]** where **K** will always be less than **N**.
* The nuclei numbers **will** be **unique**.

## Examples

An example of what is to observe **K** out of **N**: if you have 3 the following input:   
234 232 230  
2  
You have to count all the possible combinations of 2 elements that can be formed from the 3 nuclei without repeating same element twice. Order is important. In this particular case the combinations are:  
234 232

234 230

232 234

232 230

230 234

230 232

Sample test cases:

|  |  |  |
| --- | --- | --- |
| **JavaScript Input** | **Input** | **Output** |
| [  ‘234 232 230’,  ‘2’  ] | 234 232 230  2 | 6 |
| [  ‘109 113 234 232’,  ‘3’  ] | 109 113 234 232  3 | 24 |

*“I... a universe of atoms, an atom in the universe.”*

*― Richard P. Feynman*