# Algorithms Fundamentals with Java: Exam

Please submit your solutions (source code) to all the below-described problems in [Judge](https://judge.softuni.org/Contests/4004/Algorithms-Fundamentals-with-Java-Exam-01-July-2023).

## Bitcoin Miners

*As a Bitcoin miner, your goal is to select a subset of transactions from a pool of unconfirmed transactions to include in the next block that you mine. However, the block has a size limit, so you cannot include all transactions. You must carefully choose x transactions from the pool of n transactions that will generate the highest transaction fees and provide the most value to the network.*

You are a Bitcoin miner and you have a pool of **n transactions** waiting to be added to a block. You want to select **x transactions** to include in the next block, where **x <= n**.

How many different ways can you select **x transactions** from the pool of **n transactions**?

### Input

* + The input consists of two lines.
  + The first line is an integer - n - the number of all transactions in the pool.
  + The second line is an integer - x - the number of transactions you can pick as a miner.

### Output

* + The output consists of one line - p - the number of ways can you select **x transactions** from the pool of **n transactions.**

### Constraints

* + n will be an integer in the range **[1… 20]**.
  + x will be an integer in the range **[1… 10]**.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 10  3 | 120 |
| 20  5 | 15504 |

*The Times 03/Jan/2009 Chancellor on brink of second bailout for banks.*