Practice Exercise #43: North-East Paths

http://www.comp.nus.edu.sg/~cs1010/4_misc/practice.html

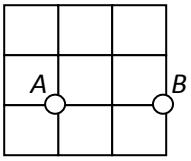
Reference: Week 11 Discussion Question 5

Date of release: 20 October 2014

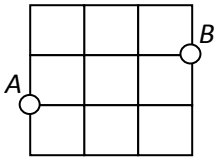
Objectives: Recursion

Task statement:

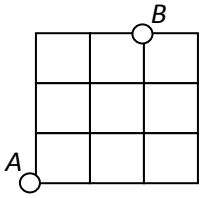
In a special town where pedestrians are only allowed to move northwards or eastwards, each of the following examples shows the total number of unique NE-paths, **ne(x, y)**, to get from point *A* to point *B*, where *B* is x rows north and y columns east of *A*. Assume that x and y are non-negative integers. By convention, ne(0, 0) = 1.



ne(0, 2) = 1



ne(1, 3) = 4



ne(3, 2) = 10

Write a recursive function **int ne(int, int)** to compute the number of NE-paths.

Sample runs:

```
Enter rows and columns apart: 0 2
Rows and columns apart: 0 2
Number of NE-paths = 1

Enter rows and columns apart: 1 3
Rows and columns apart: 1 3
Number of NE-paths = 4

Enter rows and columns apart: 3 2
Rows and columns apart: 3 2
Number of NE-paths = 10
```