Problem Set 4 Exercise #27: North-East Paths

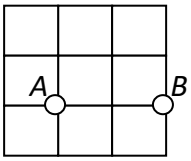
Reference: Lecture 12 notes

Learning objective: Recursion

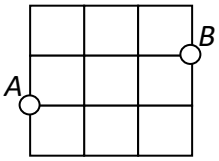
Estimated completion time: 30 minutes

Problem statement:

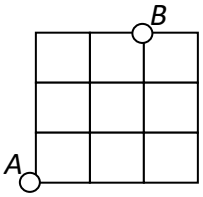
In a special town where pedestrians are only allowed to move northwards or eastwards, each of the following examples shows the total number of unique NE-paths, **ne(x, y)**, to get from point *A* to point *B*, where *B* is x rows north and y columns east of *A*. Assume that x and y are non-negative integers.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

to compute the number of NE-paths.

Write a program **ne.c** for the above task. You should **NOT** use any loop structures (*for*, *while* or *do-while* loop) in your program.

Sample run #1:

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

Sample run #2:

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