RMS Technical Solutions Test

In the below 10x10 grid, three numbers along a horizontal line have been highlighted.

8	2	22	97	38	15	0	40	0	75
49	49	99	40	17	81	18	57	60	87
81	49	31	73	55	79	14	29	93	71
52	70	95	23	4	60	11	42	69	24
22	31	16	71	51	67	63	89	41	92
24	47	32	60	99	3	45	2	44	75
32	98	81	28	64	23	67	10	26	38
67	26	20	68	2	62	12	20	95	63
24	55	58	5	66	73	99	26	97	17
21	36	23	9	75	0	76	44	20	45

The product of these numbers is 4 x 60 x 11 = 2640.

Questions

1. How many different combinations are there of three adjacent numbers in the same direction (up, down, left, right or diagonally) in the 10 x 10 grid?
2. What is the greatest product of three adjacent numbers in the same direction (up, down, left, right or diagonally) in the 10 x 10 grid?

Requirements

Submit your answers to each of the above questions along with a link to your source code. You may use any programming language of your choosing.

Your source code will preferably be held in GitHub and should contain a method which accepts a grid of size n x m and finds the greatest product of x adjacent numbers in the same direction. We will be running a large grid (much larger than the above example) through your method, pay attention to overflow and performance. In Java, the method signature would look like the following:

```
public long largestProductOfNAdjacentIntegers(int[][] searchGrid, int
adjacentIntegers)
```

Please also attach any relevant notes/comments along with your submission. Clean, readable, testable code is preferred.