F. Present to Mom

How many stars are there in the sky? A young programmer Polycarpus can't get this question out of his head! He took a photo of the starry sky using his digital camera and now he analyzes the resulting monochrome digital picture. The picture is represented by a rectangular matrix consisting of n lines each containing m characters. A character equals '1', if the corresponding photo pixel is white and '0', if it is black.

Polycarpus thinks that he has found a star on the photo if he finds a white pixel surrounded by four side-neighboring pixels that are also white:

<div align="center">

1

111

1

</div>

<div align="center">a star on the photo</div>

Polycarpus whats to cut out a rectangular area from the photo and give his mom as a present. This area should contain no less than k stars. The stars can intersect, have shared white pixels on the photo. The boy will cut out the rectangular area so that its borders will be parallel to the sides of the photo and the cuts will go straight between the pixel borders.

Now Polycarpus keeps wondering how many ways there are to cut an area out of the photo so that it met the conditions given above. Help Polycarpus find this number.

Input

The first line of the input data contains three integers n, m and k ($1 \leq n, m \leq 500; 1 \leq k \leq nm$). Then follow n lines, containing the description of the given photo as a sequence of lines. Each line contains m characters '0' or '1'.

Output

Print the required number of areas on the given photo.

Examples

input
4 6 2 111000 111100 011011 000111

output
6

input
5 5 4 11111 11111 11111 11111 11111

output
9

Note

We'll number the rows and columns below starting from 1, the coordinates (p, q) will denote a cell in row p, column q.

In the first sample Polycarpus should cut out any area containing a rectangle whose opposite corners lie in cells $(1, 1)$ and $(3, 4)$. Only rectangles with opposite corners in $(1, 1)$ and (x, y), where $x \geq 3$ and $y \geq 4$ fit the conditions.

In the second sample any rectangle whose each side is no less than four, will do. The possible rectangle sizes are 4×4, 4×5, 5×4 and 5×5. Such figures can be cut in 4 ways, 2 ways, 2 ways and 1 way correspondingly.

Please do not use the %lld specificator to read or write 64-bit integers in C++. It is preferred to use cin, cout streams or the %I64d specificator.