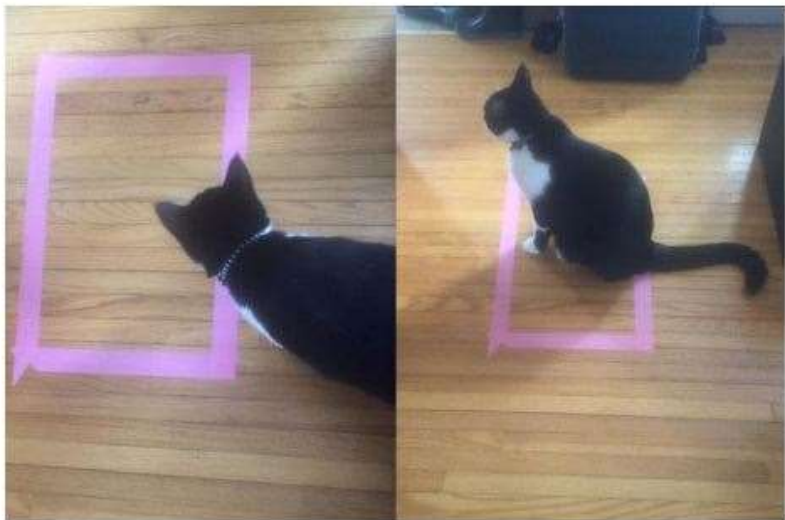


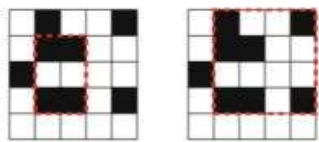
Sleeping Baker

Time Limit 2 second



Most cats love to sleep in well defined spots and Baker is not the exception, he loves to sleep in rectangular shape places. His owner decided to create for him a rectangular shape in her room. To do this, she will tie a piece of rope to different objects she has in the room to create rectangles with the rope.

In the following figure, the black sections are places in the room where the owner has an object where she can tie the piece of rope to create the rectangles. The red lines show possible rectangles she can create.



Help Baker’s owner to discover how many different rectangles she can make for her beloved cat.

Input

There are multiple test cases. Each test case starts with a line with two integers separated by a space n and m describing the size of the room. The next n lines contain m characters each with the value **1** or **0**, where **1** means that there is an object in that position were the rope can be tied of.

$$1 \leq n; m \leq 2500$$

Output

For each test case print “case y: d” (without the quotes) where y is the number of test case starting with **1** and d is the number of different rectangles Baker’s owner can make for him to sleep.

Example

Input	Output
5 5 01001 01100 10000 01101 00000	case 1: 2 case 2: 1 case 3: 100
2 2 11 11	

5 5 11111 11111 11111 11111 11111	
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