Garden (full)

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

Costa has a garden, represented by a square grid of n by n cells. Each cell is either fertile or infertile, and he wants to decorate the garden by planting one flower in each of the fertile cells.

He can buy up to n types of special flowers, which will add a variety of colours and fragrances to his garden. However, he insists that no type of special flower appears in a row or column more than once, as this would diminish how special they are. He can also buy any number of regular flowers. Costa is willing to plant any number of regular flowers in a row or column.

Costa will be charged r dollars for every regular flower he uses, and s dollars for every *type* of special flower that he uses. Help him determine the minimum cost to decorate the garden.

Input

The first line of input consists of three space-separated integers n, r and s ($0 \leq r, s \leq 10,000$).

n lines follow, each consisting of n characters. The jth character of the ith such line is either `.` or `*`, representing an infertile or fertile cell respectively.

Subtask (50 points): $1 \leq n \leq 4$.

Full (50 points): $1 \leq n \leq 50$.

Output

Print an integer, the minimum cost to plant a flower in each of the fertile cells.

Examples

standard input	standard output
3 3 7 *** .** ..*	16
3 2 7 *** .** ..*	12
3 3 5 *** .*. .**	13

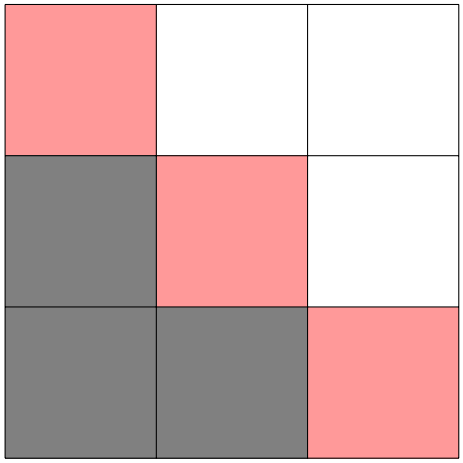
Note

In the first sample case we can place one type of special flower along the long diagonal, and three regular flowers in the top middle, top right and middle right, for a total cost of $3 \times 3 + 1 \times 7 = 16$.

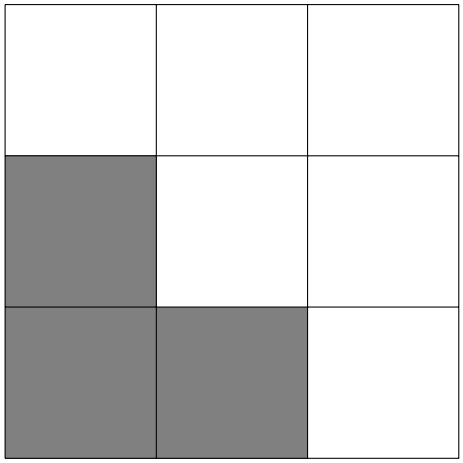
In the diagrams below:

- infertile cells are marked in gray
- cells with regular flowers are marked in white, and

- cells with special flowers are marked in other colours.



In the second sample case we can place regular flowers in all six spaces, for a total cost of $6 \times 2 + 0 \times 7 = 12$.



In the third sample case we can use two kinds of special flowers, for a total cost of $1 \times 3 + 2 \times 5 = 13$.

