Weird Reward

Time limit: *2000 ms*
Memory limit: *256 MB*

As a reward for second place at the local programming contest, a team of programmers got a string of length N that is a correct arithmetical expression. It consists of decimal numbers (without leading zeros), plus signs (without unary ones), multiplication signs, and round brackets. Formally, in this problem, a correct arithmetic expression follows this grammar:

- `<expression> ::= <multipliers> | <multipliers> '+' <expression>`
- `<multipliers> ::= <multiplier> | <multiplier> '*' <multipliers>`
- `<multiplier> ::= '(' <expression> ')' | <number>`
- `<number> ::= <digit> | <pos_digit> <number_tail>`
- `<number_tail> ::= <digit> | <digit> <number_tail>`
- `<pos_digit> ::= '1' | '2' | '3' | '4' | '5' | '6' | '7' | '8' | '9'`
- `<digit> ::= '0' | <pos_digit>`

For example, $2 \cdot ((3 + 0))$ is a correct expression, but $2((3 + 0))$ and $2 \cdot (3 + 00)$ aren't.

The first member of the team has rewritten the expression on a large sheet of paper, and the second one wants to know: how many are there **substrings** of that expression which are also correct expressions, and **their value is divisible by the given number** K? The third member decided to answer this question, help him!

Standard input

The first line contains two integers K and N. The second line contains a correct arithmetical expression.

Standard output

Output a single number, which is the answer to the problem.

Constraints and notes

- $1 \leq K \leq 10$
- $10 \leq N \leq 10^5$
- The length of the expression is exactly N
- For 10% of the tests, $N \leq 200$
- For 30% of the tests, $N \leq 2000$

Input	Output	Explanation
`4 11` `((202))+0*7`	`4`	There are 4 valid substrings: $20, 0, 0, 0 \cdot 7$
`3 10` `7002*(4+5)`	`7`	There are 7 valid substrings: $0, 0, 7002, 4 + 5, (4 + 5), 2 \cdot (4 + 5), 7002 \cdot (4 + 5)$
`5 15` `51664+((7)+(8))`	`3`	There are 3 valid substrings: $5, (7) + (8), ((7) + (8))$
`10 30` `(10+20*30+40)*50+60*(70+80*90)`	`56`	