Problem A. Oneness

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

Define *oneness* of the number x to be a number of integers $d > 1$ dividing x, whose decimal representation consists only of digit 1. For example, $oneness(121) = 1$ and $oneness(1221) = 2$.

Number n is obtained using the following algorithm involving a pseudo-random number generator. You are given two integers l and s_0, which are the length of the decimal representation of n and the generator seed.

The digits $d_0 d_1 \dots d_{l-1}$ of the number n are generated by the following recursions:

$$d_i = \lfloor s_i / 1024 \rfloor \mod 10$$
$$s_{i+1} = (747796405 s_i - 1403630843) \mod 2^{32}$$

It is guaranteed that d_0 is non-zero.

Calculate the total oneness over all integers between 1 and n.

Input

The first line contains two integers l, s ($1 \le l \le 250\,000$, $0 \le s_0 < 2^{32}$), the number of digits in the decimal representation of n and the seed of pseudo-random number generator that is used to create the decimal representation of n.

Output

Output the sum of oneness over all integers between 1 and n.

Examples

standard input	standard output
1 1024	0
2 1048	1
4 11312	123
4 31415926	942

Note

In sample tests n equals 1, 11, 1221 and 9359 respectively.