Contest Duration: 2025-07-12(Sat) 22:00 (http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250712T2100&p1=248) - 2025-07-12(Sat) 23:40 (http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250712T2240&p1=248) (local time) (100 minutes)   Back to Home (/home)

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C - Palindromic in Both Bases

Editorial (/contests/abc414/tasks/abc414_c/editorial)

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Time Limit: 3 sec / Memory Limit: 1024 MiB

Score : 350 points

Problem Statement

The decimal representation of 414 is 414, which is a palindrome. Also, the octal representation of 414 is 636, which is also a palindrome. Based on this, solve the following problem.

You are given positive integers A and N. Find the sum of all integers between 1 and N, inclusive, whose decimal representation and base-A representation are both palindromes.

Under the constraints of this problem, it can be proved that the answer is less than 2^{63}.

Constraints

- $2 \le A \le 9$
- $1 \le N \le 10^{12}$
- All input values are integers.

Input

The input is given from Standard Input in the following format:

2026-01-02 (Fri)
05:26:50 +11:00

A
N

Output

Output the answer in one line.

Sample Input 1 Copy

```
8
1000
```
Copy

Sample Output 1 Copy

```
2155
```
Copy

The integers satisfying the condition are

$1, 2, 3, 4, 5, 6, 7, 9, 121, 292, 333, 373, 414, 585$ (14 integers), and their sum is 2155.

Sample Input 2 Copy

```
8
999999999999
```
Copy

Sample Output 2 Copy

```
914703021014
```
Copy

Sample Input 3 Copy

```
6
999999999999
```
Copy

Sample Output 3 Copy

```
283958331810
```
Copy

(#telegram)

url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fabc414%2Ftasks%2Fabc414_c%3Flang%3Den&title=C%20-
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0Bases)

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