Problem Date

Input file	`stdin`
Output file	`stdout`

Fujiwara-san loves dates! She calls a date a string of form $y/m/d$ where d, m and y are positive integers without leading zeroes that represent a calendar date (d is the day, m is the month, y is the year). The precise rules for a valid date is the following:

- $y \in \{1, 2, \ldots\}$.
- $m \in \{1, \ldots, 12\}$.
- If $m \in \{1, 3, 5, 7, 8, 10, 12\}$, then $d \in \{1, \ldots, 31\}$.
- If $m \in \{4, 6, 9, 11\}$, then $d \in \{1, \ldots, 30\}$.
- If $m = 2$ and y is either a not a multiple of 4, or both a multiple of 100 and not a multiple of 400, then $d \in \{1, \ldots, 28\}$.
- If $m = 2$ and y is a multiple of 4, and either not a multiple of 100 or a multiple of 400, then $d \in \{1, \ldots, 29\}$.

For example, 2022/2/14, 2024/2/29 and 2000/2/29 are valid dates; whereas 2022/02/14, 2022/2/29 and 2100/2/29 are not valid dates.

Fujiwara-san has recently received a sequence of symbols $s_1, \ldots, s_n$, where $s_i \in \{0, 1, \ldots, 9, /\}$. She now wants to ask: how many sequences of indices $1 \leq i_1 < \ldots < i_k \leq n$ exist such that $s_{i_1}, \ldots, s_{i_k}$ are a valid date?

Input data

The first line of the input contains the integer n. The second line contains the symbols $s_1, \ldots, s_n$, not separated by spaces.

Output data

Output the answer modulo $10^9 + 7$.

Restrictions

- $1 \leq n \leq 100\,000$.

#	Points	Restrictions
1	12	$n \leq 15$
2	7	$n \leq 1\,000, s_i \in \{5, /\}$
3	8	$s_i \in \{5, /\}$
4	7	$s_i = /$ or $s_i \geq 5$
5	8	$s_i \neq 0$, $s_i \neq 2$
6	9	$n \leq 1000, s_i \neq 2$
7	11	$s_i \neq 2$
8	38	No further restrictions.

Examples

Input file	Output file	Explanations
8 55/55/55	12	5/5/5 appears 8 times within the input, and 55/5/5 appears 4 times.
7 44/2/29	9	4/2/2, 4/2/9, 4/2/29 all appear 2 times, and 44/2/2, 44/2/9, 44/2/29 all appear once.
8 11/11/31	24	1/1/1, 1/1/3, 1/1/31 appear 4 times each, 1/11/1, 1/11/3, 11/1/1, 11/1/3, 11/1/31 appear 2 times each, and 11/11/1, 11/11/3 appear once.
22 11/2/43432/534/123/234	66078	