
Multiples of seven

P91736_en

Onzè Concurs de Programació de la UPC - Semifinal (2013-06-19)

For every natural n , let $X(n)$ be the smallest natural m such that m ends with n and m is a multiple of 7. For instance, $X(1) = 21$, $X(2) = 42$, $X(3) = 63$, ..., $X(7) = 7$, $X(8) = 28$, $X(9) = 49$, $X(10) = 210$, $X(11) = 511$, ... Let S be the infinite concatenation of $X(i)$ for every $i \geq 1$, that is, $S = 21426314355672849210511\dots$. Which is the i -th digit of S ?

Input

Input consists of several cases, each with a natural i between 1 and 10^{15} .

Output

For every i , print the i -th digit of S (starting at one).

Sample input

```
1
2
3
4
13
14
15
18
19
20
100000000000000
1000000000000000
```

Sample output

```
2
1
4
2
7
2
8
2
1
0
4
5
```

Problem information

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