Kumba numbers **P90371_en**

Vint-i-unè Concurs de Programació de la UPC - Final (2023-09-27)

The highest peak of the Montserrat mountains is Sant Jeroni, with an elevation of 1236 meters. Inspired by this nice number, we will say that a natural number n is a *kumba number* if

- n is divisible by 2 and by 3,
- the factorization of the product of the digits of n only has 2s and 3s.

For instance, 1236 is a kumba number. Note that 0 cannot be factorized.

Given ℓ and r, can you compute how many kumba numbers belong to $[\ell, r]$?

Input

Input consists of several cases, each with ℓ and r. Assume $1 \leq \ell \leq r \leq 10^{12}$.

Output

For every case, print the number of kumba numbers in $[\ell, r]$.

Sample input

```
1236 1236
23 42
1000 1000000
1 1000000000000
```

Sample output

```
1
3
26067
3075841596
```

Problem information

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