GFSSOC '17 S2 - Ace is Base

Time limit: 0.6s **Memory limit:** 64M

Ace is bored on a car ride to Waterloo. He loves numbers and he has invented a new number system to prove to Waterloo that he is passionate about math. Ace has classified an Ace number as a number whose hexadecimal representation consists only of A, C, or E. For example, `10`, `202`, and `2766` are Ace numbers because their hex representations are `A`, `CA`, and `ACE` respectively. Ace would like to know how many Ace numbers there are between a closed interval $[a, b]$.

Input Specification

First line: a.
Second line: b.

For 40% of the marks, $1 \leq a \leq b \leq 10^6$.
For an additional 60% of the marks, $1 \leq a \leq b \leq 10^{10}$.

Sample Input 1

```
1
100
```

Sample Output 1

```
3
```

Explanation

The three Ace numbers are 10, 12, and 14.