Cool pairs **P24413_en**

Setzè Concurs de Programació de la UPC - Semifinal (2018-06-20)

In this problem, we will say that a pair of integer numbers (x, y) is cool if $y = x + 1$, and both x and y are perfect squares or perfect cubes. For instance, $(8, 9)$ is a cool pair, because x is a perfect cube ($8 = 2^3$) and y is a perfect square ($9 = 3^2$). As another example, $(0, 1)$ is a cool pair as well (a bit special, since 0 and 1 are perfect squares and also perfect cubes).

Given an interval $[\ell, r]$, how many cool pairs does it contain?

Input

Input consists of several cases, each one with ℓ and r. Assume $0 \leq \ell < r \leq 10^{18}$.

Output

For every case, print the number of cool pairs with x and y inside $[\ell, r]$.

Sample input	Sample output
0 8	1
0 9	2
1 15	1
999999999999999999 1000000000000000000	0

Problem information

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