

6433 An Idea of Mr. A

Mr. A proposes to his son the following problem:

“Consider two integers n_1 and n_2 such that $1 \leq n_1 < n_2 \leq 10^4$. Using the function

$$p : \mathbb{N}^* \rightarrow \mathbb{N}^*, p(n) = 2^n, \forall n \in \mathbb{N}^*$$

(where \mathbb{N}^* is the set of positive integers) we define the set

$$S(n_1, n_2) = \{p(p(n)) + 1 \mid n_1 \leq n \leq n_2\}$$

We also define a set of pairs as follows:

$$T(n_1, n_2) = \{(m_1, m_2) \mid m_1, m_2 \in S(n_1, n_2), m_1 < m_2\}$$

Consider the formula:

$$T(n_1, n_2) = \{(m_1, m_2) \mid m_1, m_2 \in S(n_1, n_2), m_1 < m_2\}$$

where $\gcd(m_1, m_2)$ is the greatest common divisor of m_1 and m_2 . The problem asks to find the number $R(n_1, n_2)$.”

Solve the problem proposed by Mr. A.

Input

The input file contains several test cases, each of them consists of a single line having the values for n_1 and n_2 , separated by exactly one space.

Output

For each test, the result will be written to standard output and consists of the value of $R(n_1, n_2)$.

Sample Input

```
1 34
15 147
125 1000
```

Sample Output

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561
8778
383250
```