Dora's Set

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Dora has a set s containing integers. In the beginning, she will put all integers in $[l, r]$ into the set s. That is, an integer x is initially contained in the set if and only if $l \leq x \leq r$. Then she allows you to perform the following operations:

- Select three **distinct** integers a, b, and c from the set s, such that $\gcd(a, b) = \gcd(b, c) = \gcd(a, c) = 1$[†].
- Then, remove these three integers from the set s.

What is the maximum number of operations you can perform?

[†]Recall that $\gcd(x, y)$ means the greatest common divisor of integers x and y.

Input

Each test consists of multiple test cases. The first line contains a single integer t ($1 \leq t \leq 500$) — the number of test cases. The description of the test cases follows.

The only line of each test case contains two integers l and r ($1 \leq l \leq r \leq 1000$) — the range of integers in the initial set.

Output

For each test case, output a single integer — the maximum number of operations you can perform.

Example

standard input	standard output
8 1 3 3 7 10 21 2 8 51 60 2 15 10 26 1 1000	1 1 3 1 2 3 4 250

Note

In the first test case, you can choose $a = 1$, $b = 2$, $c = 3$ in the only operation, since $\gcd(1, 2) = \gcd(2, 3) = \gcd(1, 3) = 1$, and then there are no more integers in the set, so no more operations can be performed.

In the second test case, you can choose $a = 3$, $b = 5$, $c = 7$ in the only operation.

In the third test case, you can choose $a = 11$, $b = 19$, $c = 20$ in the first operation, $a = 13$, $b = 14$, $c = 15$ in the second operation, and $a = 10$, $b = 17$, $c = 21$ in the third operation. After the three operations, the set s contains the following integers: 12, 16, 18. It can be proven that it's impossible to perform more than 3 operations.