Pair Divisible

For two segments of integer [l1, r1] and [l2, r2]. How many pair (x, y) which l1 <= x <= r1 and l2 <= y <= r2 where x * y divisible by p.

Input

The first line is integer p (1 <= p <= 10^9)

Second line includes l1, r1 separated by a space (1 <= l1 <= r1 <= 10^9).

Third line includes l2, r2 separated by a space (1 <= l2 <= r2 <= 10^9).

Output

Result of problem.

Example

Input:
2
1 4
2 6
Output:
16