A prime number is a natural number which has exactly two distinct natural number divisors. First few prime numbers are: 2, 3, 5, 7, 11, 13, ... and so on.

A non decreasing prime sequence (NDPS) is a sequence of prime numbers where i-th element is not less than $(i-1)$-th element for all $i > 1$. The weight of a NDPS is the product of all numbers of the sequence. Here are some examples of NDPSs with their corresponding weights.

NDPS	Weight
2	2
2 5 13	130 ($2 \times 5 \times 13$)
2 3 97	582 ($2 \times 3 \times 97$)

An NDPS a is smaller than another NDPS b, if number of elements in a is smaller than the number of elements in b. If a and b has same number of elements then lexicographically smaller sequence is the smaller NDPS. For the list given above, $\{2\}$ is the smallest sequence because it has only one elements. $\{2\ 5\ 13\}$ and $\{2\ 3\ 97\}$ both have 3 elements, so $\{2\ 3\ 97\}$ is second smallest because it is lexicographically smaller than $\{2\ 5\ 13\}$.

For a given range (A, B), where $A \leq B$, you have to find the K-th smallest NDPS between all the NDPSs having weights in between A and B (inclusive).

Input

Input will start with an integer T ($T \leq 5000$), the number of test cases. Each of the next T line will contain three integers A, B and K ($2 \leq A \leq B \leq 1000000$). K is a positive integer and you can safely assume that at least K NDPSs exists in the given range.

Output

For each case, you have to output one line, case number followed by the K-th smallest NDPS between all the NDPSs having weights between A and B (inclusive). See sample output for exact format.

Sample Input

```
3
2 10 1
2 10 5
2 10 9
```

Sample Output

```
Case 1: 2
Case 2: 2 2
Case 3: 2 2 2
```