Mirko and his older brother Slavko are playing a game. At the beginning of the game, they pick three numbers K, L, M. In the first and only step of the game, each of them picks their own K consecutive integers.

Slavko always picks the first K integers (numbers 1, 2, ..., K). Mirko has a special demand – he wants to choose his numbers in a way that there are exactly L happy numbers among them. He considers a number happy if it meets at least one of the following requirements:

- the number is smaller than or equal to M
- the number is **prime**

Out of respect to his older brother, L will be **smaller than or equal to** the total number of happy numbers in Slavko's array of numbers.

They will play a total of Q games with different values K, L, M. For each game, help Mirko find an array that meets his demand.

INPUT

The first line of input contains Q ($1 \leqslant Q \leqslant 100\,000$). Each of the following Q lines contains three integers, the i^{th} line containing integers K_i, L_i, M_i ($1 \leqslant K_i, M_i \leqslant 150$, $0 \leqslant L_i \leqslant K_i$) that determine the values K, L, M that will be used in the i^{th} game.

OUTPUT

Output Q lines, the i^{th} line containing an integer, the initial number of Mirko's array in the i^{th} game. If an array with the initial number being smaller than or equal to $10\,000\,000$ does not exist, output -1. If there are multiple possible solutions, output any.

SAMPLE TESTS

input	input	input
3 1 1 1 2 0 2 3 1 1	3 4 1 1 5 2 3 5 0 3	4 7 2 5 6 1 1 10 4 5 6 2 2
output	**output**	**output**
1 8 4	6 4 24	6 20 5 4