Pay That Box! Home Edition (boardgame)

Giorgio is organizing an amazing board game night. He has invited N friends, and they are going to play *Pay That Box! Home Edition*, the board game version of the homonymous game show. Giorgio really loves it: he owns several copies of it, so that there can be a lot of matches going on at the same time.

Figure 1: Some friends have already arrived and are eager to play!

The rules of the game state that it must be played by at least L and at most U players. Of course, Giorgio needs to make sure that he can split his friends into many groups such that each group has the correct number of players. He also needs to check that he has enough copies of the game. It would be a shame if someone would not be able to play!

Given the number of friends, can you help Giorgio find out whether everybody will be able to play? If so, can you tell him the minimum number of copies of the game he needs?

☞ Among the attachments of this task you may find a template file `boardgame.*` with a sample incomplete implementation.

Input

The first line contains three integers N, L and U: the number of friends and the minimum and maximum number of players of the game.

Output

You need to write a single line with an integer. If Giorgio cannot split his friends into many groups such that everybody is able to play, write `-1`. Otherwise, write the minimum number of copies of the game he must have in order to make everyone play.

Constraints

- $1 \leq N, L, U \leq 10^9$.
- $L \leq U$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (15 points) $N, L, U \leq 5$.

– **Subtask 3** (15 points) $L = 1$.

– **Subtask 4** (15 points) $L = U$.

– **Subtask 5** (15 points) $N, L, U \leq 10^5$.

– **Subtask 6** (40 points) No additional limitations.

Examples

input	output
6 2 5	2
6 4 5	-1

Explanation

In the **first sample case** Giorgio's friends can be divided into two groups, the first one with four people and the second one with two.

In the **second sample case** there is no way to split Giorgio's friends into groups such that each of them has between 4 and 5 people.