Problem I – ICPC training.

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Training for the ICPC is hard, but you really want to go to the world finals that is why this vacations you will train as hard as you can. You have identified that each day you train hard you get t units of tiredness, however, if you rest a day your tiredness is reduced in r units but its never below 0, this is, if your current tiredness is 3 and $r = 4$ and you decided to rest this day then your tiredness will be 0. Tiredness is accumulative so if you train for d consecutive days your tiredness will increase in $d * t$ units. The same happens when you rest, if you rest for d consecutive days your tiredness will decrease in $d * r$ units.

You are planning your training for this vacations, in the plan you will decide for each of the N days in your vacations if you train or rest, also, you don't want to have more than T units of tiredness in any moment of the vacations, and want to train in exactly M days (these M days don't need to be consecutive).

As you are in vacations you decided your optimal training plan is that in which you train the M days in the less number of days possible from your vacations, so you can take the rest of the days to enjoy with your family. Can you find the number of days in your optimal plan?

Input

The input consists of a single line that contains five integer numbers separated by a space N ($1 \leq N \leq 10^6$), M ($1 \leq M \leq N$), T, t and r ($1 \leq T, t, r \leq 1000$), representing the number of days in your vacations, the minimum numbers of days you want to train, the maximum tiredness you want to have in any moment in your vacations, the tiredness that you get if you train a day, and the tiredness you lose if you rest a day respectively.

Output

Output a single line with an integer indicating the minimum number of days in the plan so that you have trained M days, if there is no plan where you can train M days then print -1.

Sample input 1	**Sample output 1**
`10 5 50 25 15`	`10`

Sample input 2	**Sample output 2**
`5 1 10 11 5`	`-1`