DMOPC '19 Contest 1 P1 - Test Scores

Time limit: 2.0s **Memory limit:** 64M

Veshy is suffering in AP Physics! He has a series of N tests coming up and he has come up with four parameters describing each test:

- n_i which indicates the number of problems on the i-th test
- a_i which indicates the number of points Veshy gets for one correct answer
- b_i which indicates the number of points Veshy loses for an incorrect or unanswered question
- t_i which indicates the score Veshy would like to earn on the i-th test

For the i-th test, output the minimum number of questions Veshy has to answer correctly in order to get at least t_i marks. If Veshy's standards are too high and he cannot get t_i marks on the i-th test, then output `-1`.

Constraints

In all tests,
$1 \leq N \leq 100$
$1 \leq n_i, a_i, b_i, t_i \leq 10^9$

Input Specification

The first line contains one integer, N, the number of tests to follow.
The next N lines contain four space-separated integers, n_i a_i b_i t_i.

Output Specification

Output N lines. The i-th line should contain one integer, the answer to the i-th test.

Sample Input

```
5
1 4 2 5
9 2 6 4
2 9 3 5
3 5 2 10
8 2 5 7
```

Sample Output

```
-1
8
1
3
7
```