# Flag Game

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|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 1 second |
| Memory limit: | 256 megabytes |

We have $L$ Exun flags, $M$ CW flags, and $N$ TS flags. You can do the following operation any number of times:

- Choose two different flags and turn them into the remaining flag.

For example, you can choose a CW flag and a TS flag and turn them into two Exun flags. Your objective is to convert all the flags into the flag of a particular club. Determine whether this objective is achievable. If it is, find the minimum number of operations required to achieve it. For each input file, solve $T$ test cases.

## Input

The first line contains an integer- $T$ (number of test cases) The next $T$ lines contain 3 space separated integers- $L, M, N$

## Output

For each case, print $-1$ if the objective is unachievable; otherwise, print the minimum number of operations to achieve it.

## Scoring

- $2 \leq N \leq 18$
- $0 \leq Ai \leq 109$
- All values in input are integers.

## Example

| standard input | standard output |
|---|---|
| 3<br>1 2 2<br>1 2 3<br>1 2 4 | 2<br>-1<br>4 |

## Note

For example, in case 3, one optimal sequence of operations is:

- Choose a CW flag and TS flag, turning them into two Exun flags;
- Choose a Exun flag and TS flag, turning them into two CW flags;
- Choose a Exun flag and TS flag, turning them into two CW flags;
- Choose a Exun flag and TS flag, turning them into two CW flags;