Help a researcher

A scientist was doing a research on some kinds of bacteria. He found that the kinds, he examined, take **T** unit of time to grow (be mature) enough in order to can reproduce.

Also he found that each type reproduces with a constant rate which is **N** new bacteria every **F** unit of time.

(where **F**=**T**)

Task

write a progam that reads **L** (number of bacteria (at the begining of the experiment)), **M** (number of mature bacteria of them), **T** (time of each to get mature which is also the time needed for reproducing **N** new bacteria), **N** (rate of reproducing per **T** unit of time) and **Z** (period elapsed by the experiment).

Calculate the number of bacteria after **Z** unit of time.Regardless of life-span

Constraints

$1 \leq \mathbf{L} \leq 5$ number of bacteria (at the begining of the experiment)

$1 \leq \mathbf{M} \leq \mathbf{L}$ number of mature bacteria

$1 \leq \mathbf{T} \leq 5$ time of each to get mature which is also the time needed for reproducing **N** new bacteria

$1 \leq \mathbf{N} \leq 50$ rate of reproducing per **T** unit of time

$1 \leq \mathbf{Z}/\mathbf{T} \leq 4{,}300$ period elapsed by the experiment

Note

Z is always divisible by **T**.

Input

- **L** (number of bacteria (at the begining of the experiment))
- **M** (number of mature bacteria of them)
- **T** (time of each to get mature which is also the time needed for reproducing **N** new bacteria)
- **N** (rate of reproducing per **T** unit of time)
- **Z** (period elapsed by the experiment)

Output

- the number of bacteria after **Z** unit of time.Regardless of life-span.

Example

Input:
3
2
3
1
3

Output:
5

The experiment begins with 2 mature bacteria and one unmature bacterium.
For, each of the mature bacteria reproduces after 3 units of time.
Then th total becomes 4 -as each one got a new one (2*2)-.
But, for the unmature bacterium after 3 units of time, it only become mature.
After all of that the experiment finishes with 5 bacteria.

Input
2
0
1
1
100

Output:
1146295688027634168202