Legoyramids

After so many years of competitive programming, Asilbek finally decided to never sit in front of a computer again. In search of a new hobby to keep himself entertained, he discovered a new passion: **building pyramids out of LEGO bricks**.

Each LEGO piece is **1×1** in size and has a **height of 1**. Asilbek declared:

> *"No more coding today! I'm building pyramids. This is the new life — just me and my LEGOs!"*

Of course, he's not doing this just for fun — Asilbek is determined to become the **ultimate LEGO pyramid builder** in the world. But there's a small problem...

The Pyramid Rules

Asilbek builds the pyramid layer by layer from the bottom up:

- The bottom layer has $n \times m$ LEGO blocks.
- Each next layer is **a units shorter in width** and **b units shorter in height** than the layer below it.
- But **no dimension can fall below 1** — if it does, it is considered to be 1.

So, the size of the i-th layer is:

```
layer(i) = max(n - a × (i - 1), 1) × max(m - b × (i - 1), 1)
```

Asilbek has only **C LEGO blocks**, and he wants to build **as many layers as possible** without exceeding this number. Determine the **maximum number of pyramid layers** Asilbek can build using no more than C LEGO blocks in total.

Input

The first line contains a single integer T — the number of test cases.

For each test case:
A single line contains five integers:

```
n m a b C
```

- n, m — dimensions of the base layer
- a, b — reduction per layer (in width and height)
- C — number of LEGO blocks Asilbek has

Output

For each test case, print a single integer — the **maximum number of layers** Asilbek can build without using more than C blocks.

Constraints

- $1 \le T \le 10^5$
- $0 \le n, m \le 10^9$
- $0 \le a, b \le 1$
- $0 \le C \le 10^{18}$

Subtasks

1. (6 points) $a = b = 0$
2. (8 points) $\sum C \le 10^6$
3. (12 points) $\sum (n + m) \le 4 \times 10^5$, $a = 0$
4. (14 points) $\sum (n + m) \le 4 \times 10^5$
5. (60 points) No additional constraints

Example

Input

```
1
4 3 1 1 25
```

Output

```
8
```