Vaccine Production | Problem Code: **VACCINE1**

Read problem statements in Hindi, Bengali, Mandarin Chinese, Russian, and Vietnamese as well.

Increasing COVID cases have created panic amongst the people of Chefland, so the government is starting to push for production of a vaccine. It has to report to the media about the exact date when vaccines will be available.

There are two companies which are producing vaccines for COVID. Company A starts producing vaccines on day D_1 and it can produce V_1 vaccines per day. Company B starts producing vaccines on day D_2 and it can produce V_2 vaccines per day. Currently, we are on day 1.

We need a total of P vaccines. How many days are required to produce enough vaccines? Formally, find the smallest integer d such that we have enough vaccines at the end of the day d.

Input

Input

- The first and only line of the input contains five space-separated integers D_1, V_1, D_2, V_2 and P.

Output

Print a single line containing one integer — the smallest required number of days.

Constraints

- $1 \leq D_1, V_1, D_2, V_2 \leq 100$
- $1 \leq P \leq 1,000$

Subtasks

Subtask #1 (30 points): $D_1 = D_2$

Subtask #2 (70 points): original constraints

Example Input 1

```
1 2 1 3 14
```

```
1 2 1 3 14
```

Example Output 1

```
3
```

Explanation

Since $D_1 = D_2 = 1$, we can produce $V_1 + V_2 = 5$ vaccines per day. In 3 days, we produce 15 vaccines, which satisfies our requirement of 14 vaccines.

Example Input 2

```
5 4 2 10 100
```

Example Output 2

```
9
```

Explanation

There are 0 vaccines produced on the first day, 10 vaccines produced on each of days 2, 3 and 4, and 14 vaccines produced on the fifth and each subsequent day. In 9 days, it makes a total of $0 + 10 \cdot 3 + 14 \cdot 5 = 100$ vaccines.