# E. Birds

Apart from plush toys, Imp is a huge fan of little yellow birds!

To summon birds, Imp needs strong magic. There are $n$ trees in a row on an alley in a park, there is a nest on each of the trees. In the $i$-th nest there are $c_i$ birds; to summon one bird from this nest Imp needs to stay under this tree and it costs him $cost_i$ points of mana. However, for each bird summoned, Imp increases his mana capacity by $B$ points. Imp summons birds one by one, he can summon any number from $0$ to $c_i$ birds from the $i$-th nest.

Initially Imp stands under the first tree and has $W$ points of mana, and his mana capacity equals $W$ as well. He can only go forward, and each time he moves from a tree to the next one, he restores $X$ points of mana (but it can't exceed his current mana capacity). Moving only forward, what is the maximum number of birds Imp can summon?

## Input

The first line contains four integers $n$, $W$, $B$, $X$ ($1 \leq n \leq 10^3, 0 \leq W, B, X \leq 10^9$) — the number of trees, the initial points of mana, the number of points the mana capacity increases after a bird is summoned, and the number of points restored when Imp moves from a tree to the next one.

The second line contains $n$ integers $c_1, c_2, ..., c_n$ ($0 \leq c_i \leq 10^4$) — where $c_i$ is the number of birds living in the $i$-th nest. It is guaranteed that .

The third line contains $n$ integers $cost_1, cost_2, ..., cost_n$ ($0 \leq cost_i \leq 10^9$), where $cost_i$ is the mana cost to summon a bird from the $i$-th nest.

## Output

Print a single integer — the maximum number of birds Imp can summon.

## Examples

**input**

```
2 12 0 4
3 4
4 2
```

**output**

```
6
```

**input**

```
4 1000 10 35
1 2 4 5
1000 500 250 200
```

**output**

```
5
```

**input**

```
2 10 7 11
2 10
6 1
```

**output**

```
11
```

## Note

In the first sample base amount of Imp's mana is equal to $12$ (with maximum capacity also equal to $12$). After he summons two birds from the first nest, he loses $8$ mana points, although his maximum capacity will not increase (since $B = 0$). After this step his mana will be $4$ of $12$; during the move you will replenish $4$ mana points, and hence own $8$ mana out of $12$ possible. Now it's optimal to take $4$ birds from the second nest and spend $8$ mana. The final answer will be — $6$.

In the second sample the base amount of mana is equal to $1000$. The right choice will be to simply pick all birds from the last nest. Note that Imp's mana doesn't restore while moving because it's initially full.