Wait , is that a sandwich ?!!!

Joey loves sandwiches.Being an avid dreamer, one day he had a dream of standing in a long queue of people on the **0** th step of the his favourite sandwich shop in the city.With the shop stocking only limited supplies , people queue up every morning before the shop opens.The shop will be opening in **n** minutes. For every **i** th minute Joey can skip some people in front of him and climb up **a[i]** steps , thus getting himself closer to the shop.On the other hand , if he doesn't climb up at the **i** th minute , he will be pushed down by **b[i]** steps from his current step as some people might enter into the queue infront of him.Unfortunately , Joey is unaware that there are infinite number of steps above and below him.All the steps from 0th step to the **steps leading** to the sandwich shop are numbered as **1,2,3...+ve infinity** and all the **steps below** the 0th step are numberes as **-1,-2,-3...-ve infinity**.Joey knows that he can cut the queue and climb up the stairs only **K** times , without getting caught by the security guard.

Find out the step number that is closest to the sandwich shop which Joey can reach ,if he can climb exactly **K** times.

Input Format

First line contains **T** , Number of testcases.

Each testcase has the following format:

->First line contains 2 spaced integers **N** (total time) and **K**(number of times Joey can decide to climb)

->Second line contains **N** spaced integers where the **i** th number denotes the number of steps Joey can **climb up** in the **ith** minute.

->Third line contains **N** spaced integers where the **i** th number denotes the number of steps by which Joey will be **pushed down** in the **ith** minute.

Constraints

1 <= T <= 10
1 <= N <= 100000
1 <= A[i],B[i] <= 10
1 <= K <= N

Output Format

Print a single integer which denotes the step number that is closest to the sandwich shop that Joey can reach after **N** minutes.

Sample Input 0

```
1
3 1
5 1 1
1 1 1
```

Sample Output 0

```
3
```

Explanation 0

Since K = 1 , Joey can climb only once.Consider the following three cases,

CASE 1: Joey climbs in the 1st minute.

->After the 1st minute , he will be standing on step number 5.
->In the 2nd and 3rd minute he will be pushed down by 1 step so at the end of 3 minutes he will be standing on step number.

CASE 2: Joey climbs in the 2nd minute.

->In the 1st minute , he will be pushed to the step number -1.
->He will climb up to the step number 0 in the 2nd minute.
->He will again be pushed to the step number -1 in the 3rd minute.

CASE 3: Joey climbs in the 3rd minute.

->In the 1st minute , he will be pushed to the step number -1.
->He will be pushed down to the step number -2 in the 2nd minute.
->In the 3rd minute, he will climb up one step to reach step number -1.

Out of all the cases the step number that is closest to the sandwich shop at the end of 3 minutes is 3.