Problem G: Double Radars

Ali recently found a treasure and has arranged the coins from the treasure around a circle. There are k houses around the circle with equal distances. Houses are numbered 1 through k consecutively in the clockwise direction. The treasure contains n coins, where the i^{th} coin (for $1 \leqslant i \leqslant n$) has the value w_i and is located at the house x_i.

To protect the treasure, Ali has installed two radars stationed at the center of the circle, monitoring its circumference. Radar i (for $i \in \{1, 2\}$) starts by monitoring house r_i and moves $\frac{1}{v_i}$ houses per minute. More intuitively, every v_i minutes, the Radar i goes one house forward. Initially, the first radar moves clockwise, and the second radar moves counterclockwise. Whenever the two radars meet, they both reverse their directions. Note that this can happen in the area between two adjacent houses.

Gholi, who wants to steal as many coins as possible, plans to start at an arbitrary house on the circle and move at most $\frac{1}{v}$ houses per minute in either direction (clockwise or counterclockwise). He starts moving at the time zero. He can reverse his direction anytime or stay still for a while. If Gholi crosses paths with one of the radars at any moment, he will be immediately caught and sent to jail. He cannot steal a coin if this happens at a house.

Help Gholi to maximize the total value of the coins he can steal before being detected by the radars.

Input

The first line contains three integers, n ($1 \leqslant n \leqslant 10^5$) number of coins, k ($1 \leqslant k \leqslant 10^9$) number of houses around the circle, and v ($1 \leqslant v \leqslant 10^4$) speed of Gholi.

The second line contains the starting monitoring house r_1 and speed v_1 of the first radar ($1 \leqslant r_1 \leqslant k, 1 \leqslant v_1 \leqslant 10^4$).

The third line contains the starting monitoring house r_2 and speed v_2 of the second radar ($1 \leqslant r_2 \leqslant k, 1 \leqslant v_2 \leqslant 10^4$). It is guaranteed that $r_1 \neq r_2$.

The fourth line contains n distinct integers, $x_1, x_2, \ldots, x_n$, representing the houses where the coins are located ($1 \leqslant x_i \leqslant k$).

The fifth line contains n integers, $w_1, w_2, \ldots, w_n$, representing the value of each coin ($1 \leqslant w_i \leqslant 10^9$).

Output

Output the maximum total value of coins Gholi can steal before being detected by the radars.

Example

Standard Input	Standard Output
3 5 1 1 2 2 3 1 2 4 1 2 4	6