Problem E. Life Transfer

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Note: "feli" is the local currency.

In the great city of Nekoresti, there are n people for which we know their ages: a_i is the age of the i-th person. Currently, they are on vacation, so they decided to go on a trip to Pisiev to visit a Koshkseum, a famous museum. They can go either by car or by motorcycle:

- a **car** can transport k people (one driver which has to be at least l_c years old and $k-1$ passengers). The cost to rent a car is p_c feli.
- a **motorcycle** can transport only one person (which has to be at least l_m years old). The cost to rent a motorcycle is p_m feli.

Unfortunately, people have money issues, so they decided to consult Mewlin, the great local magician from the city. Using a formidable spell called Mucadabra, Mewlin can transfer age from one person to another. Formally, he can reduce the age x of a person and increase the age y of another person by the same amount (so the sum of ages is constant). The cost to transfer 1 unit of age is t feli. For magic medical reasons, the age of a person cannot be changed by more than d years (if the initial age is x, his age must be at least $x-d$ and at most $x+d$ at all times). Also, the age cannot go below 1 year old.

Help the people from Nekoresti to spend as little money as possible, so they can arrive in Pisiev.

Input

The first line contains two integers n and k ($1 \le n, k \le 10^5$) — the number of people and the maximum number of people that can be in one car.

The second line contains four integers l_c, p_c, l_m and p_m ($1 \le l_m < l_c \le 10^5$, $1 \le p_m < p_c \le 10^5$) — the minimum needed age to drive a car; the price of renting one car; the minimum needed age to drive a motorcycle and the price of renting one motorcycle.

The third line contains two integers t and d ($0 \le t, d \le 10^5$) — the price of transferring one year and the maximum number of times the spells can be applied per each person.

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^5$) — the age of the i-th person.

Output

Print one number, the smallest amount of feli the people need to spend in order for them to reach their destination. If there is no such solution, print -1.

Examples

standard input	standard output
2 2 18 1000 16 1 5 3 16 15	1010
2 2 23 10 15 5 2 2 9 20	-1