Currency

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	1024 mebibytes

There is a $2 \times n$ grid, and you need to walk from the top-left corner $(1, 1)$ to the bottom-right corner $(2, n)$. Each edge has a weight, and there are m additional constraints. Each constraint is described by three integers, i, j, and c. What they mean is: if you traverse both edges $(1, i)$ to $(1, i + 1)$ and $(2, j)$ to $(2, j + 1)$, you incur an additional cost of c.

Find the minimum value of the sum of the edge weights plus the costs incurred.

Input

The first line contains two integers, n and m ($1 \leq n \leq 500$; $1 \leq m \leq 1000$).

The next three lines describe the weights of each edge:

The first of these lines contains $n - 1$ integers, where the i-th integer represents the weight of the edge from $(1, i)$ to $(1, i + 1)$.

The second of these lines contains n integers, where the i-th integer represents the weight between $(1, i)$ and $(2, i)$.

The third of these lines contains $n - 1$ integers, where the i-th integer represents the weight of the edge from $(2, i)$ to $(2, i + 1)$.

All edge weights are positive and do not exceed 10^9.

Each of the following m lines contains three integers, i, j, and c, representing a constraint ($1 \leq i, j < n$; $1 \leq c \leq 10^9$).

Output

Print a line containing a single integer: the answer to the problem.

Example

standard input	*standard output*
5 2 2 3 5 2 6 1 2 1 1 1 2 4 2 1 4 4 2 3 1	13