

Railway Loop

Description

Ashley wants to travel across the country by train. Each railway can be regarded as a **unidirectional** edge connecting two scenic spots, and the railway i in this country has a value v_i and a value p_i , for value and price. Now she wants to find a loop, which starts from any scenic spots, so that the ratio of $\sum v_i$ and $\sum p_i$ can be maximized.

Note: The loop may not contains all the scenic spots, but there can be no duplicate railways in this loop. No self-loop and repeated-edges in the graph.

Now please help her calculate the maximum value.

Input Format

The first line contains n, m , means that there are n scenic spots and m railways.

For the following m lines, each line contains three integers a, b, v , representing a railway from a to b , with a value of v .

The last line contains m integers, the i_{th} means p_i .

Output Format

One real number, the maximum value, keep 1 demical place.

If there is no loop, output -1.

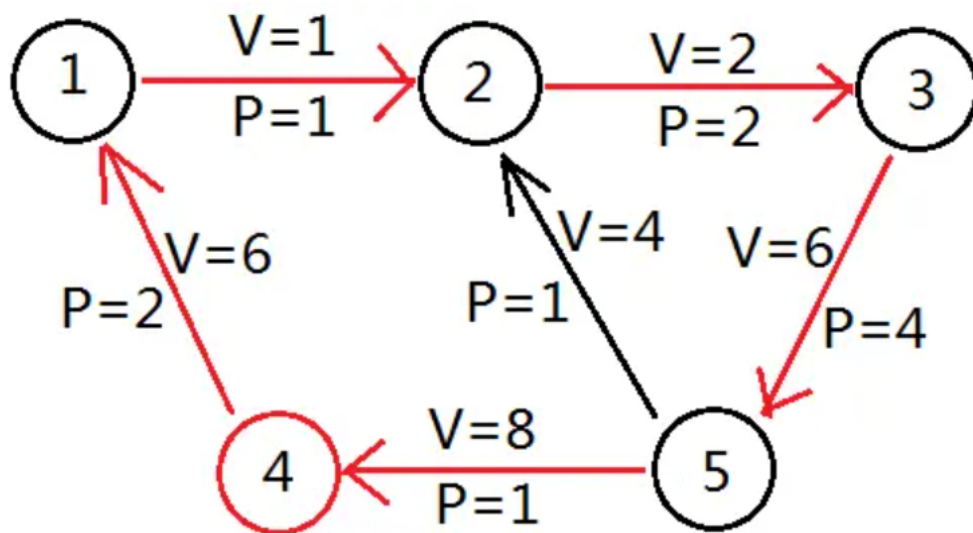
Sample

Sample Input

```
5 6
1 2 1
4 1 6
5 4 8
2 3 2
5 2 4
3 5 6
1 2 1 2 1 4
```

Sample Output

2.3



Hint

For 30% testcases, $1 \leq n \leq 100$, $1 \leq m \leq 20$.

For 60% testcases, $1 \leq n \leq 3000$, $1 \leq m \leq 2000$.

For 100% testcases, $1 \leq n \leq 7000$, $1 \leq m \leq 10000$.

It is guaranteed that the answer is less than 200.