Problem A

We have n cities joined by $n-1$ highways into a tree. For each highway, we know the time (in minutes) it takes to drive over it. In a given amount of time, how many of the cities can I visit? I do not need to spend any time in the visited city, but I also do not want to visit any city more than once.

Input and output

The first line of the input contains integers n and t ($1 \leq n \leq 10^5$, $1 \leq t \leq 10^9$), the number of cities and the number of minutes I can spend visiting them. The cities are numbered from 1 to n. The i-th of the following $n-1$ lines contains two integers v and d ($1 \leq v \leq i$, $1 \leq d \leq 10^9$), indicating that the city number $i+1$ is joined to the city number v by a highway that takes d minutes to traverse. Output a single integer, the maximum number of cities I can visit.

Example

Input:

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4 10
1 6
2 6
3 4
```

Output:

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3
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