



Fence Loops

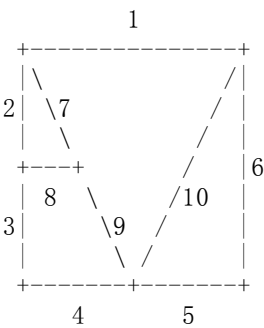
The fences that surround Farmer Brown’s collection of pastures have gotten out of control. They are made up of straight segments from 1 through 200 feet long that join together only at their endpoints though sometimes more than two fences join together at a given endpoint. The result is a web of fences enclosing his pastures. Farmer Brown wants to start to straighten things out. In particular, he wants to know which of the pastures has the smallest perimeter.

Farmer Brown has numbered his fence segments from 1 to N (N = the total number of segments). He knows the following about each fence segment:

- the length of the segment
- the segments which connect to it at one end
- the segments which connect to it at the other end.

Happily, no fence connects to itself.

Given a list of fence segments that represents a set of surrounded pastures, write a program to compute the smallest perimeter of any pasture. As an example, consider a pasture arrangement, with fences numbered 1 to 10 that looks like this one (the numbers are fence ID numbers):



The pasture with the smallest perimeter is the one that is enclosed by fence segments 2, 7, and 8.

PROGRAM NAME: fence6

INPUT FORMAT

Line 1:	N (1 ≤ N ≤ 100)
	N sets of three line records: <ul style="list-style-type: none">• The first line of each record contains four integers: s, the segment number (1 ≤ s ≤ N); L_s, the length of the segment (1 ≤ L_s ≤ 255); N1_s (1 ≤ N1_s

Line 2..3*N+1:	<p>≤ 8) the number of items on the subsequent line; and N_{2_s} the number of items on the line after that ($1 \leq N_{2_s} \leq 8$).</p> <ul style="list-style-type: none"> The second line of the record contains N_1 integers, each representing a connected line segment on one end of the fence. The third line of the record contains N_2 integers, each representing a connected line segment on the other end of the fence.
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SAMPLE INPUT (file fence6.in)

```

10
1 16 2 2
2 7
10 6
2 3 2 2
1 7
8 3
3 3 2 1
8 2
4
4 8 1 3
3
9 10 5
5 8 3 1
9 10 4
6
6 6 1 2
5
1 10
7 5 2 2
1 2
8 9
8 4 2 2
2 3
7 9
9 5 2 3
7 8
4 5 10
10 10 2 3
1 6
4 9 5

```

OUTPUT FORMAT

The output file should contain a single line with a single integer that represents the shortest surrounded perimeter.

SAMPLE OUTPUT (file fence6.out)

```

12

```

Submission file Name: 未选择文件

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