

1 Who missed lunch?

St. Xavier School has decided to run a trial for a system that supplies the students with packed lunch boxes for lunchtime. The system is designed as follows

There are N premade lunch boxes for N Students, and they are placed on top of each other. The lunch boxes can be either in Rectangle shape or circular in shape. Each student has his/her own preference for the type of lunchbox that they want. There are the correct number of circular and rectangular lunch boxes to satisfy each student.

The Students stand in a random ordered line as soon as it is lunch time. If the student at the head of the line finds that the top tiffin in the stack is not of their preference they will go back and rejoin the queue at the end.

Given the number of children and lunch boxes, type of lunch boxes and preferences of students, estimate the number of students who will not be able to eat lunch.

Input/Output

Input	Output	Comments
6 0 1 1 0 1 0 1 1 1 0 1 0	1	<ul style="list-style-type: none"> First line 6 indicates the number of students and lunch boxes. Second line 0 1 1 0 1 0, represents the stack of lunch boxes. 0 represents Rectangle, 1 represents Circle. Third line 1 1 1 0 1 0, represents the preference 0(Rectangle) or 1(Circle) of a student from the start till end of the queue.
4 0 0 1 0 1 0 0 0	0	

2 Diamond Necklace

Aditi has recently bought a diamond necklace. She shared the picture of the necklace with a few of her friends and they in return shared it with their other friends. On knowing this, Aditi is panic and thinks that her diamond necklace may be stolen as many people knew about the necklace besides her friends.

Aditi knows her friends very well because, friends only whose friendship strength with other friends, is less than or equal to a constant value (K) would share the picture with others.

Given the total number of friends, total number of friendship links, the information of friendship linkage, the friendship strength of every link and the friends with whom, Aditi shared the picture with, determine how many people have the picture of the diamond necklace.

The graph can also be disconnected.

Input/Output

Input	Output	Comments
5 5 1 2 6 1 3 3 2 3 2 3 4 6 3 5 5 2 5 1 5	4	<ul style="list-style-type: none"> The first line 5 5 <ul style="list-style-type: none"> 5 – Total number of friends. 5 – Total number of friendship links Each of the next five lines represent, friends and their friendship strength. The seventh line 2 5, <ul style="list-style-type: none"> 2 represents the number of friends with whom the picture was shared. 5 represents the friendship strength constant (K) The eighth line 1 5 <ul style="list-style-type: none"> Aditi shared picture with her friends 1 and 5. On traversing graph of friends based on friendship strength and the value of K, the output is 4

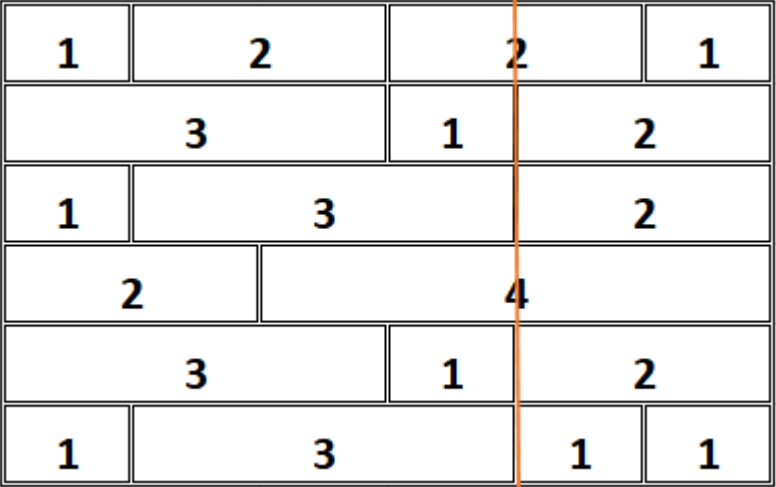
3 Line in the Wall

There is a brick wall in front of you. The wall is rectangular and has several rows of bricks. The bricks have the same height but different width. You want to draw a vertical line from the top to the bottom and cross the least bricks.

The brick wall is represented by a list of rows. Each row is a list of integers representing the width of each brick in this row from left to right. If your line go through the edge of a brick, then the brick is not considered as crossed. You need to find out how to draw the line to cross the least bricks and return the number of crossed bricks.

Note:

1. The width sum of bricks in different rows are the same.
2. You cannot draw a line just along one of the two vertical edges of the wall, in which case the line will obviously cross no bricks.

Input	Output	Comments
6 1 2 2 1 3 1 2 1 3 2 2 4 3 1 2 1 3 1 1	2	<ul style="list-style-type: none"> • First line 6 represents total number of rows • The next six lines represents the sizes of bricks in each row.  <ul style="list-style-type: none"> • The output is 2 bricks... i.e., 2 in first row and 4 in fourth row