A sample input for the week 2 coding question (corresponding to the graphs shown on the next page) is the following:

```
3
3
A B
B A
C
9
1 2 9
2 3 5 6
3 2 7
4 6
5 2
6 2 4
7 3
8 9
9 1 8
31
A B C
B A D E
C A F G
D B H I
E B J K
F C L M
G C N O
H D P Q
I D R S
J E T U
K E V W
L F X Y
M F Z AA
N G AB AC
O G AD AE
P H
Q H
R I
S I
T J
U J
V K
W K
X L
Y L
Z M
AA M
AB N
AC N
AD O
AE O
```

The correct output to the sample input would be:

```
A B C
1 2 3 7 5 6 4 9 8
A B D H P Q I R S E J T U K V W C F L X Y M Z AA G N AB AC O AD AE
```

The sample input has three instances. The first instance corresponds to the graph below on the left. The second instance corresponds to the graph below on the right. The third instance is the graph below those.