Exercises: Minimum Spanning Trees

Warning: The hard deadline has passed. You can attempt it, but **you will not get credit for it**. You are welcome to try it as a learning exercise.

To specify an array or sequence of values in an answer, you must separate the values by a single space character (with no punctuation and with no leading or trailing whitespace). For example, if the question asks for the first ten powers of two (starting at 1), the only accepted answer is:

1 2 4 8 16 32 64 128 256 512

If you wish to discuss a particular question and answer in the forums, please post the entire question and answer, including the seed (which is used by the course staff to uniquely identify the question) and the explanation (which contains the correct answer).

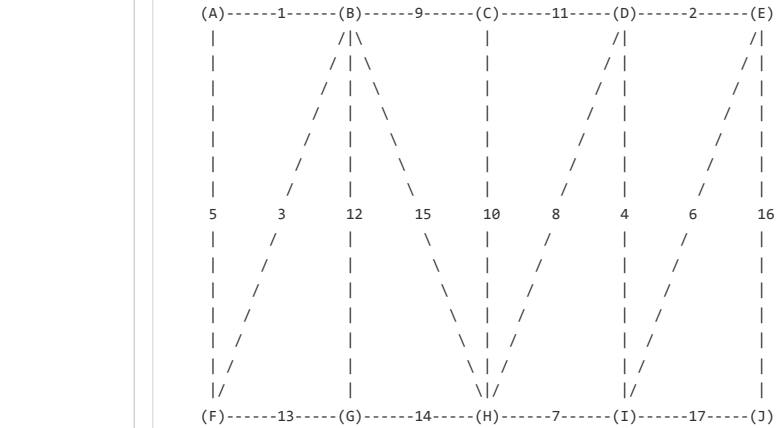
☐ **In accordance with the Coursera Honor Code, I (Atul Gupta) certify that the answers here are my own work.**

Question 1

(seed = 616734)
Consider the following edge-weighted graph with 10 vertices and 17 edges:

v-w	weight
F-A	5
A-B	1
H-B	15
B-G	12
B-C	9
B-F	3
C-D	11
C-H	10
D-H	8
I-D	4
E-D	2
J-E	16
E-I	6
G-F	13
G-H	14
I-H	7
I-J	17

Here is a graphical representation of the same graph:



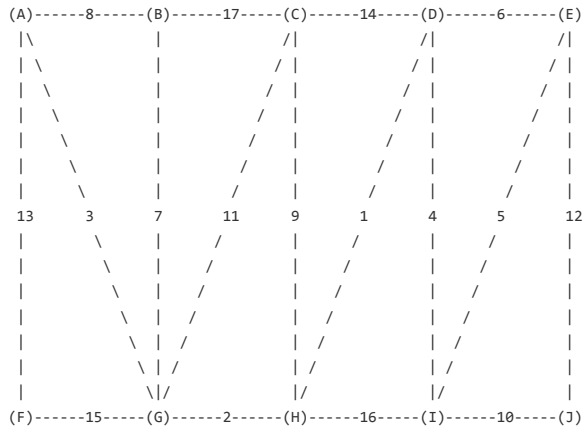
Give the sequence of edges in the MST in the order that Kruskal's algorithm discovers them.
To specify an edge, use its weight.

Question 2

(seed = 610708)
Consider the following edge-weighted graph with 10 vertices and 17 edges.

v-w	weight
F-A	13
A-B	8
G-A	3
B-C	17
G-B	7
C-D	14
C-G	11
C-H	9
E-D	6
D-I	4
H-D	1
E-J	12
E-I	5
F-G	15
G-H	2
I-H	16
J-I	10

Here is a graphical representation of the same graph:



Give the sequence of edges in the MST in the order that Prim's algorithm discovers them, when
starting Prim's algorithm from vertex C. To specify an edge, use its weight.

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You cannot submit your work until you agree to the Honor Code. Thanks!