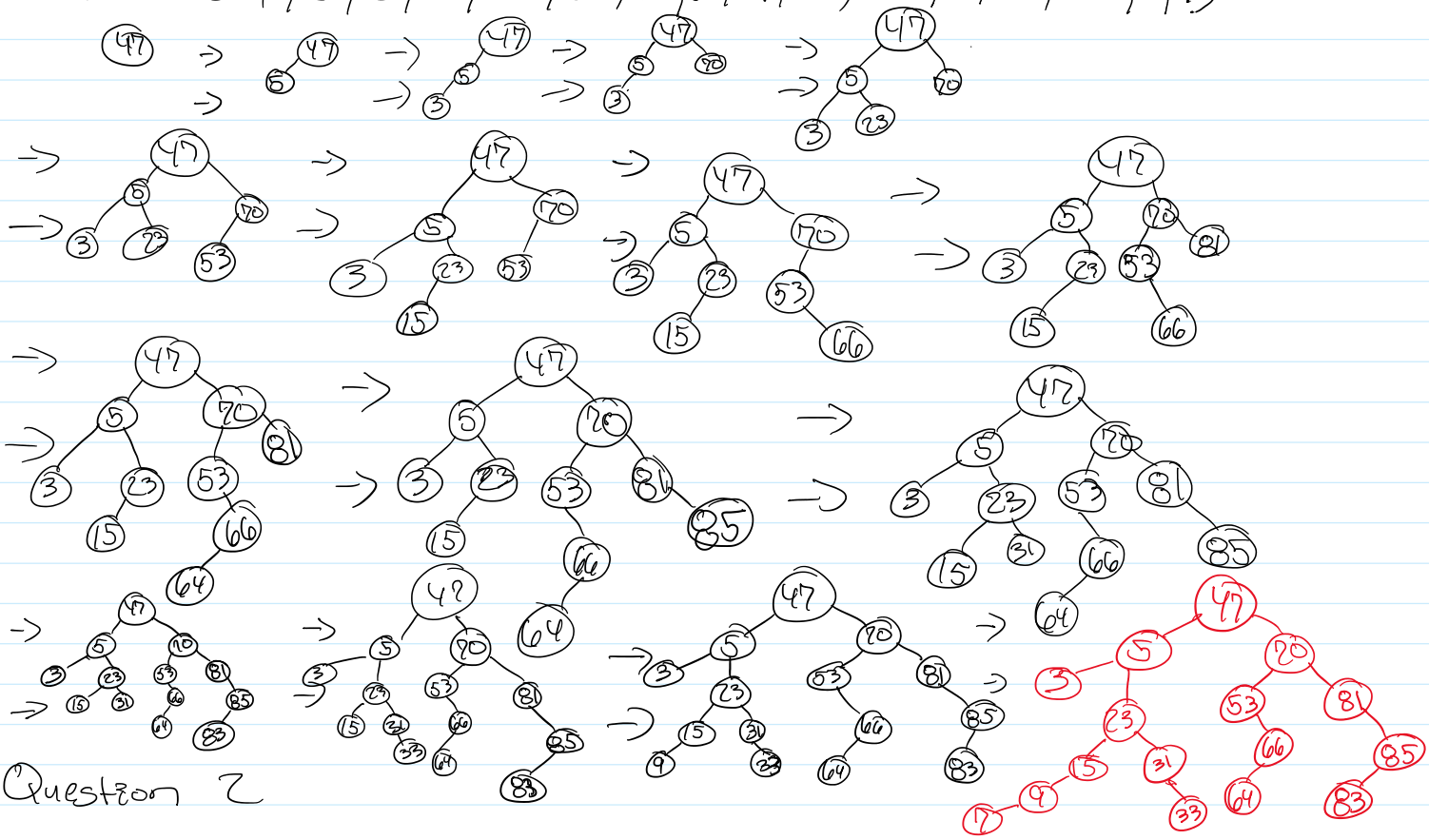
Coral Schmidt Montilla

Lab 6

Thursday, March 17, 2022 10:32 AM

Question 1 (47, 5, 3, 70, 23, 53, 15, 66, 81, 64, 85, 31, 83, 33, 9, 7)



Question 2

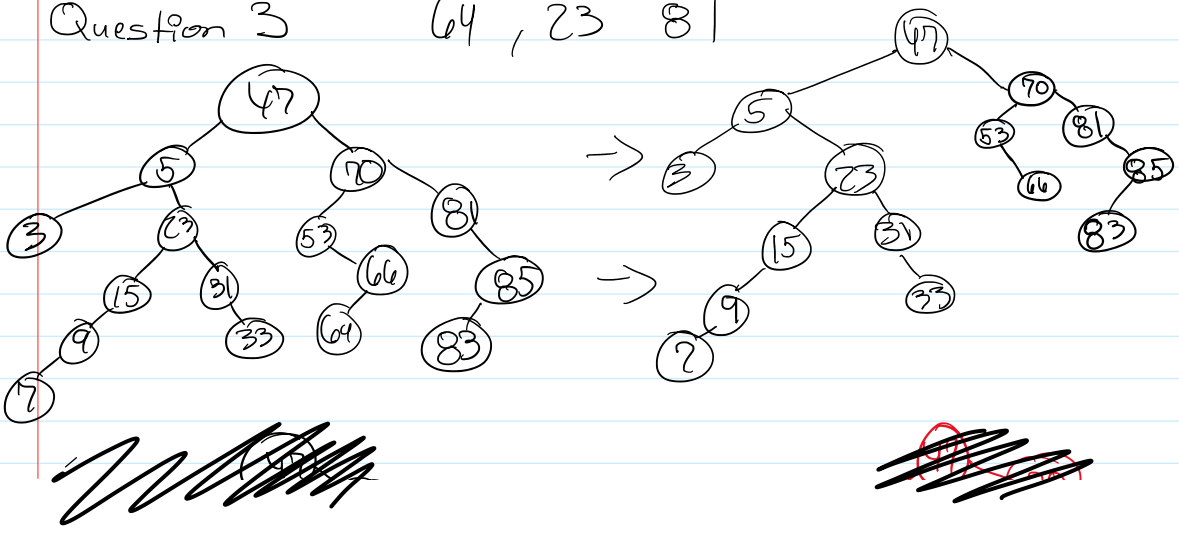
Preorder: 47, 5, 3, 23, 15, 9, 7, 31, 33, 70, 53, 66, 64, 81, 85, 83

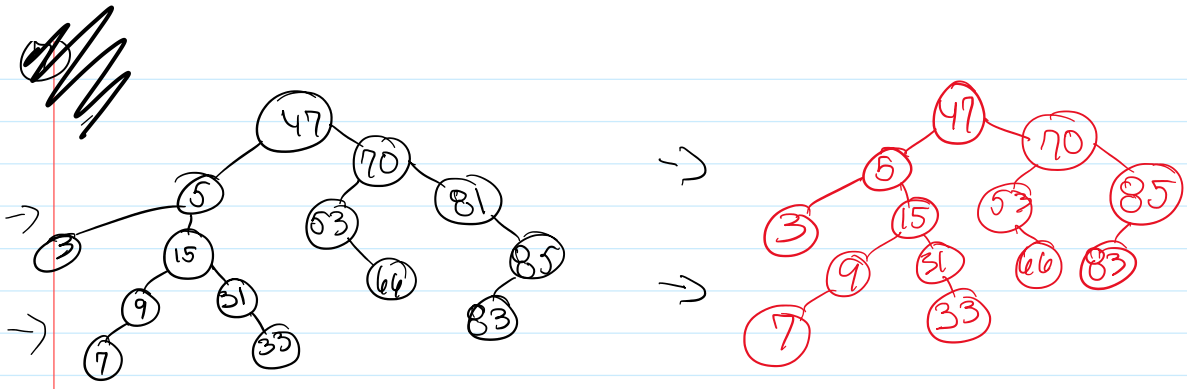
Inorder: 3, 5, 7, 9, 15, 23, 31, 33, 47, 53, 64, 66, 70, 81, 83, 85

Postorder Traversal: 3, 7, 9, 15, 33, 31, 23, 5, 64, 66, 53, 83, 85, 81, 70, 47

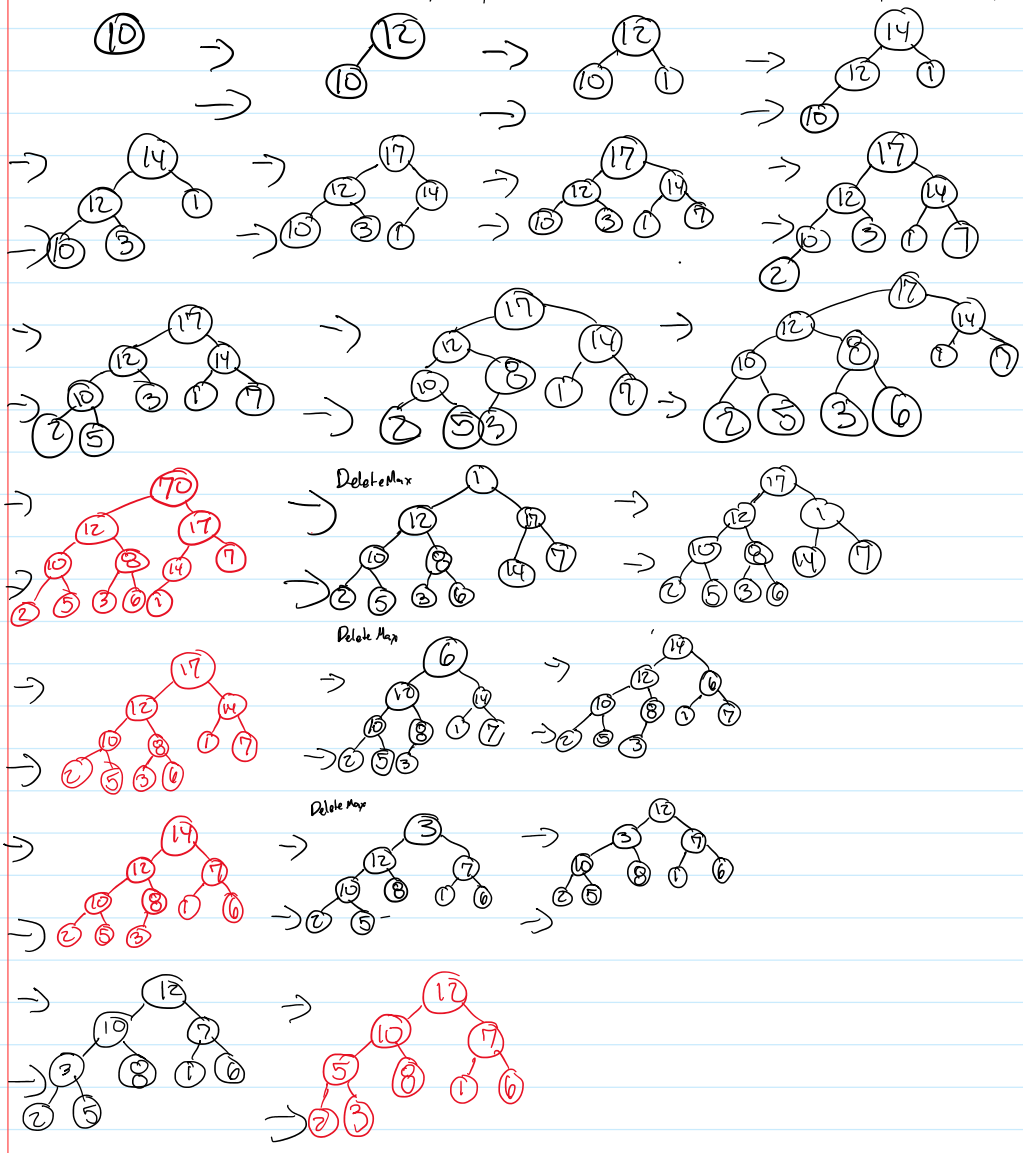
I believe the list is in pre-order.

Question 3 64, 23 81

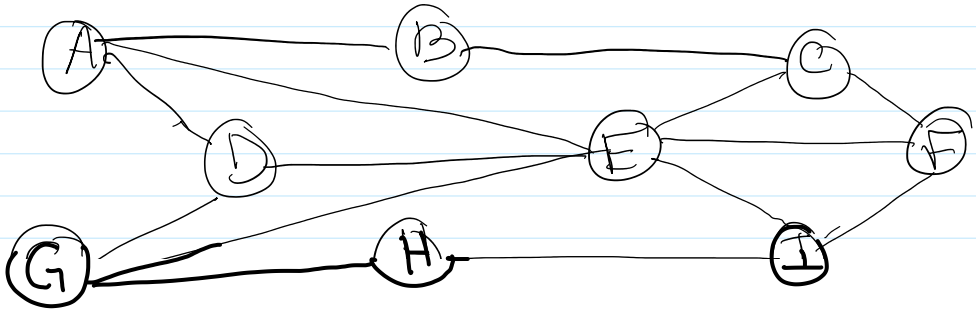


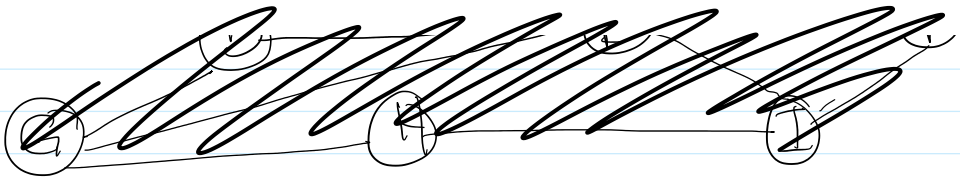


Question 4 (10, 12, 1, 14, 3, 17, 7, 2, 5, 8, 6, 20)



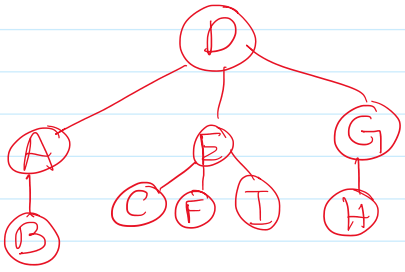
Question 5



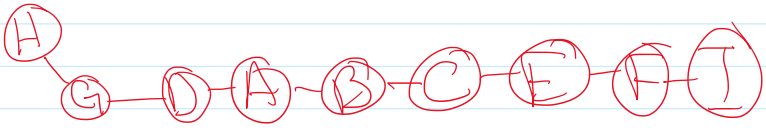


Undirected Graph

BFS: D, A, E, G, B, C, F, I, H

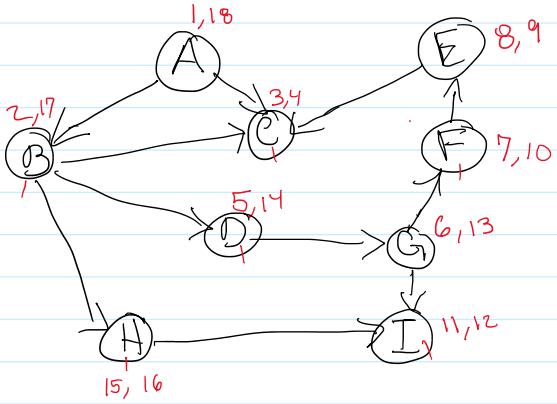


DFS: H, G, D, A, B, C, E, F, I (I wrote it sideways for space)

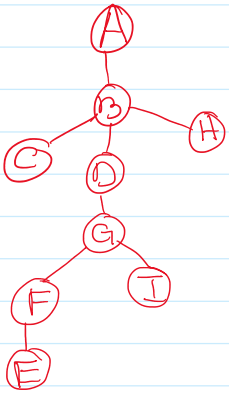


Question 6

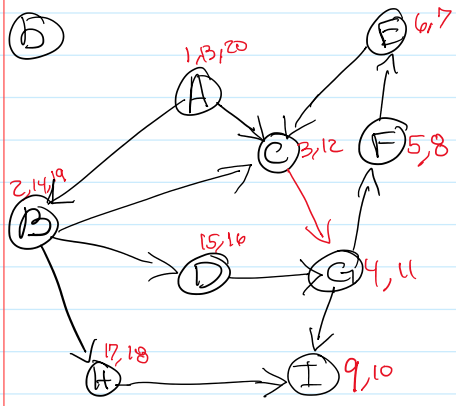
@



DFS: A, B, C, D, G, F, E, I, H

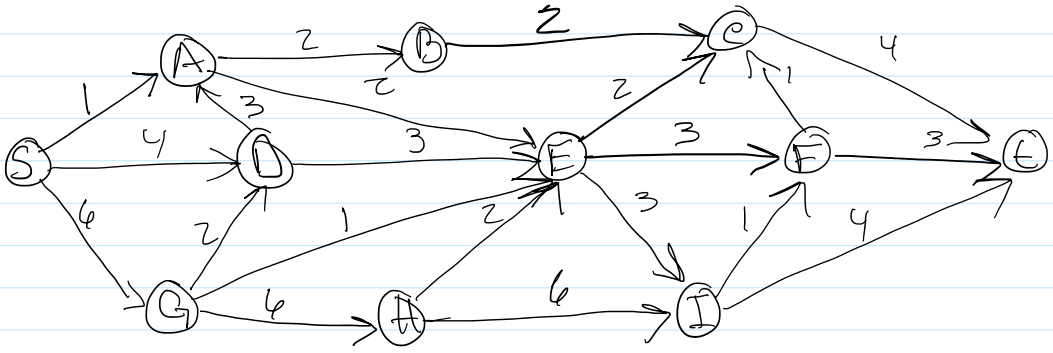


TS: A, B, H, D, G, I, F, E, C



TS: A, B, H, D, C, G, I, F, E

Question 7



Node	Shortest D from S	Previous Node
S	0	
A	∞, 1	S
B	∞, 3	A
C	∞, 5	B or E
D	∞, 4	S
E	∞, 3	A
F	∞, 6	E
G	∞, 6	S
H	∞, 12	G
I	∞, 6	E
t	∞, 9	C or F

S → A = 0 + 1 = 1
S → D = 0 + 4 = 4
S → G = 0 + 6 = 6
A → E = 1 + 2 = 3
A → B = 1 + 2 = 3
B → C = 3 + 2 = 5
C → t = 5 + 4 = 9
D → A = 4 + 3 = 7
D → E = 4 + 3 = 7
E → C = 3 + 2 = 5
E → F = 3 + 3 = 6
E → I = 3 + 3 = 6
F → C = 6 + 1 = 7
F → t = 6 + 3 = 9
G → D = 6 + 2 = 8
G → E = 6 + 1 = 7
G → H = 6 + 6 = 12
H → E = 12 + 2 = 14
H → I = 12 + 6 = 18
I → F = 6 + 1 = 7
I → t = 6 + 4 = 10

Shortest way to go from S to t is by going from

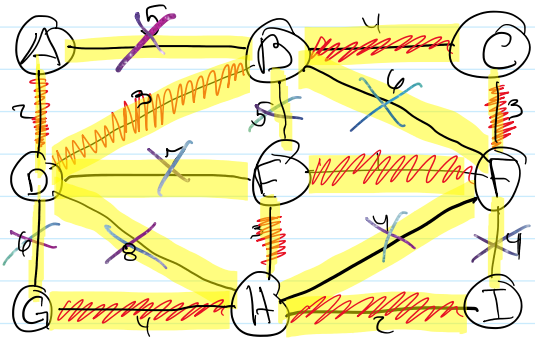
S →(1) A →(2) B →(2) C →(4) 9

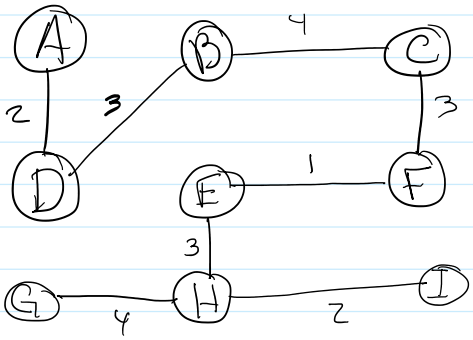
or

S →(1) A →(2) E →(3) F →(3) 9

Question 8

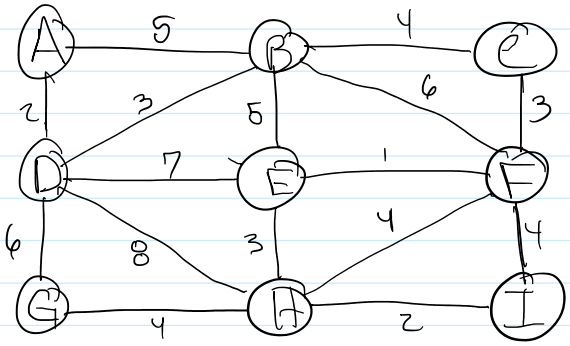
Prim's:



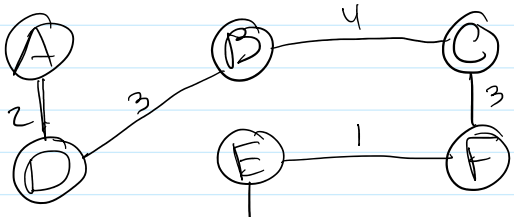


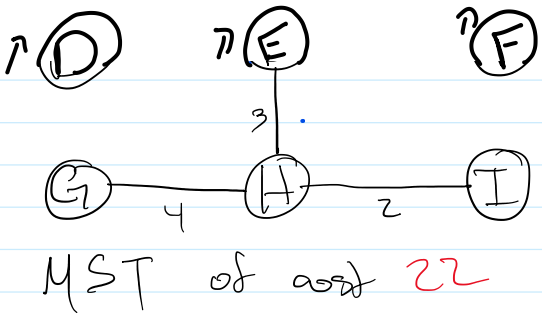
MST of cost 22

Kruskal:



E→F	A→D	H→I	B→D	C→F	E→H	B→C	E→H	F→I	G→H	A→B	B→E	B→F	D→G	D→E	D→H
1	2	2	3	3	3	4	4	4	4	5	5	6	6	7	8





MST of cost 22

Question 9 (12, 44, 13, 88, 23, 94, 11, 39, 20, 16, 5)

0	1	2	3	4	5	6	7	8	9	10
44	12	13	16	88	23	94	39	5	11	20