Sheet 2

Sunday, October 24, 2021 1:44 PM

Ex 1.

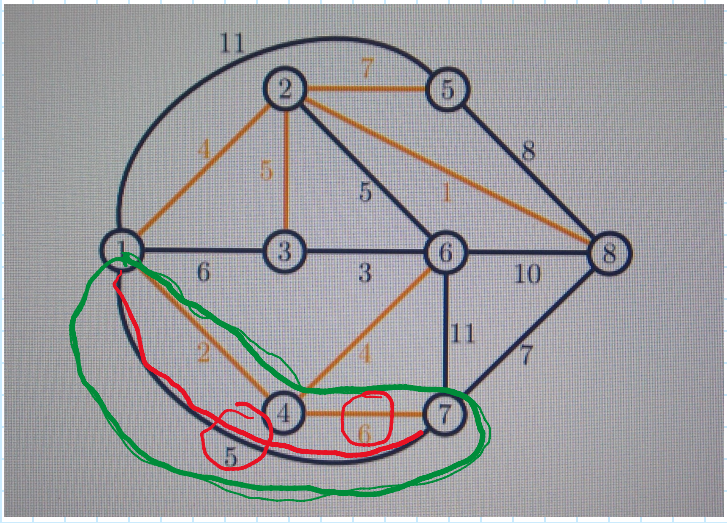
a) If for such an edge e, there exisies an edge $f \in F \cap C$ with $c(f) > c(e)$,

the non-tree edge is not the most expensive one in the correspondy fundamental cycle,

according to Cycle Criterion,

it is not the minimum spanning tree.

b)

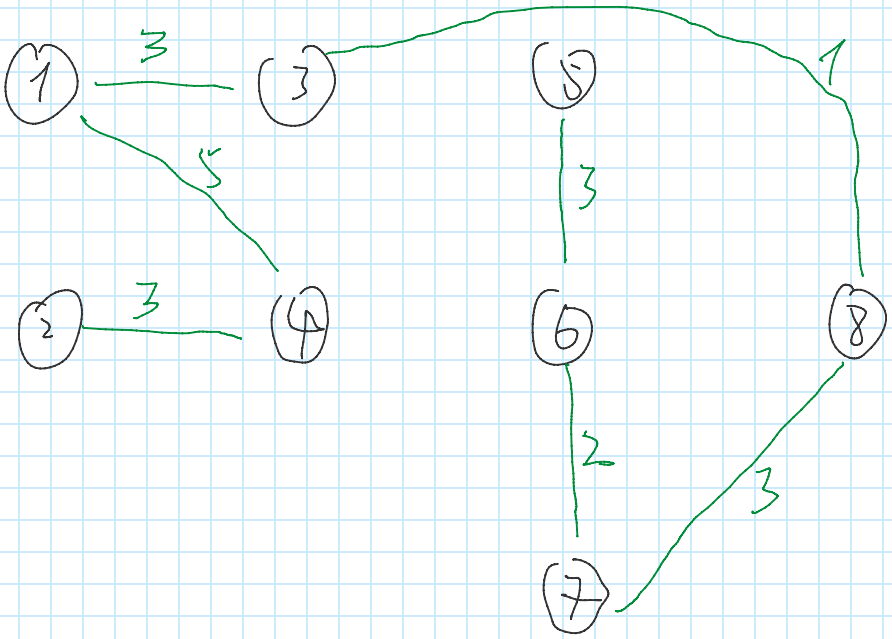


According to a, the cost of edge ① —5— ⑦ is less than the cost of edge ④ —6— ⑦, so the orange tree T is not minimal.

Ex-2 Kruskal's algorithm

✓ (3) —1— (8)
✓ (6) —2— (7)
✓ (1) —3— (3)
✓ (2) —3— (4)
✓ (5) —3— (6)
✓ (7) —3— (8)
✗ (6) —4— (8)
✓ (1) —5— (4)

✗ (4) —5— (5)
✗ (2) —6— (7)
✗ (3) —6— (5)
✗ (1) —7— (2)
✗ (4) —7— (6)
✗ (5) —8— (8)
✗ (1) —11— (7)
✗ (3) —11— (4)



the minimum spanning tree of G is shown above