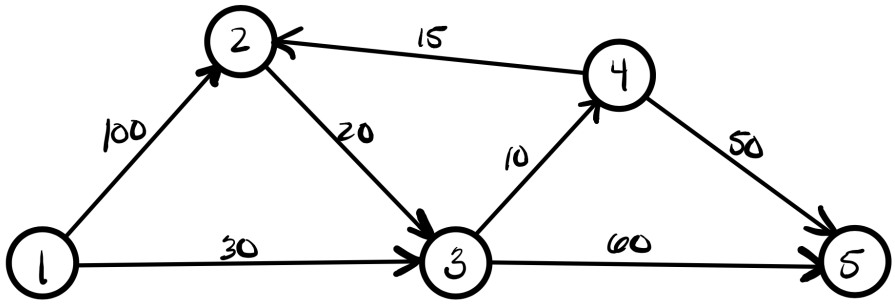
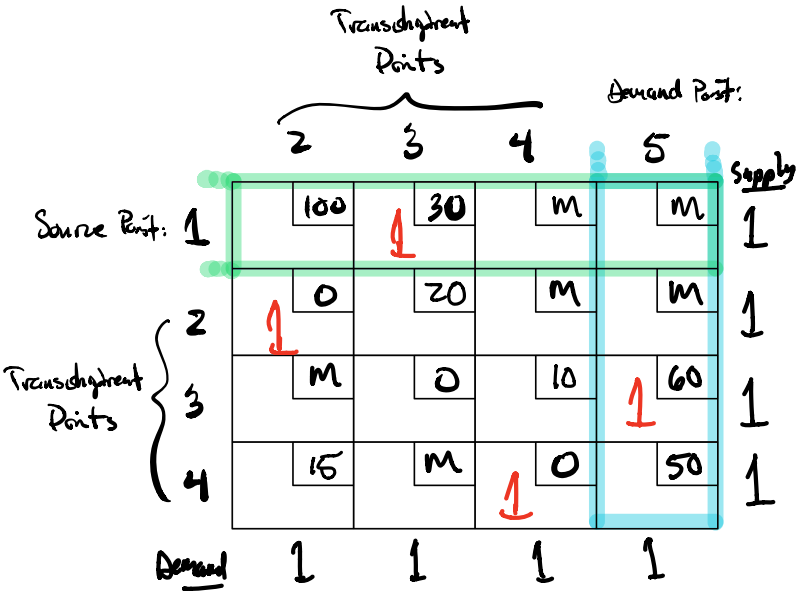
§8.2 (part 3): Transportation Formulation of Shortest Path

1.] Consider the network given below. The graph shows the permissible routes and their lengths in miles between city 1 (node 1) and four other cities (nodes 2 to 5).



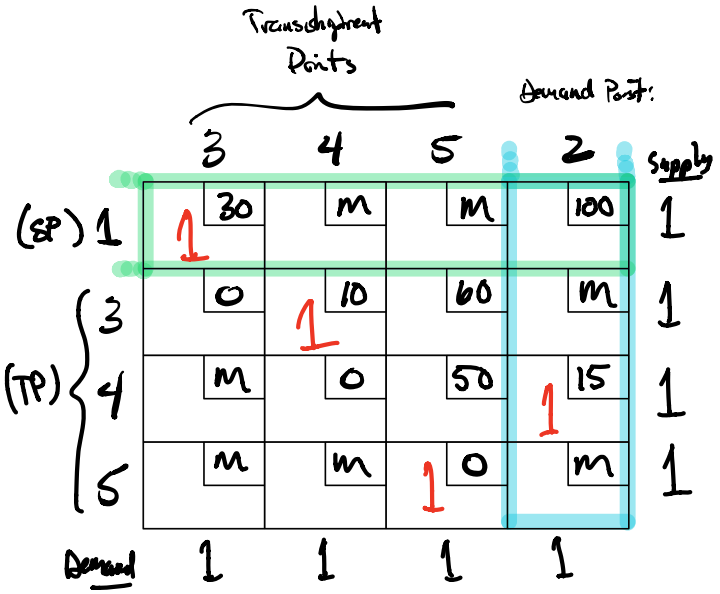
Use the grids below to formulate the shortest path problem (a) from node 1 to node 5, and (b) from node 1 to node 2.



From Excel:

Shortest Path: 1 – 3 – 5

Min Distance = 90

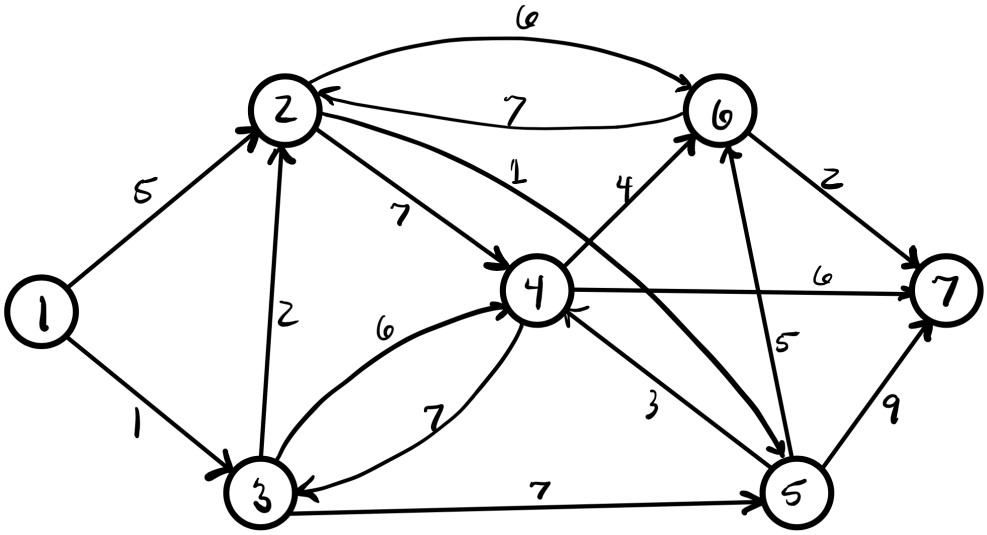


From Excel:

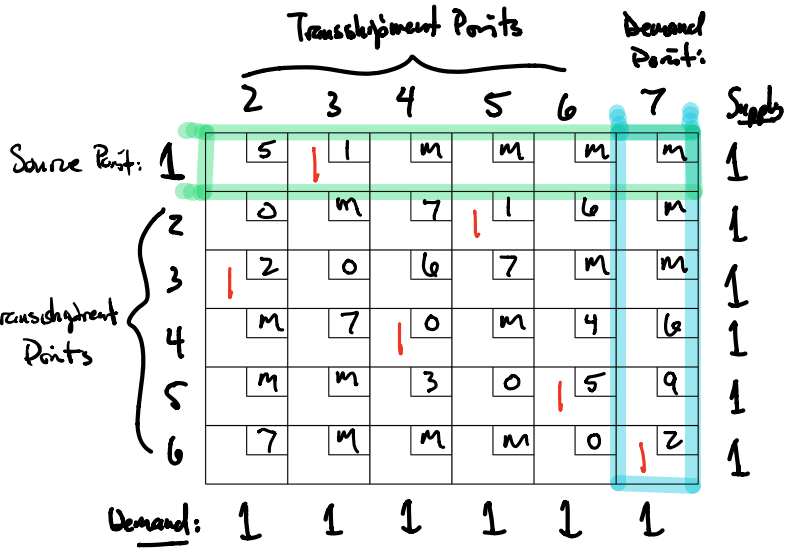
Shortest Path: 1 – 3 – 4 – 2

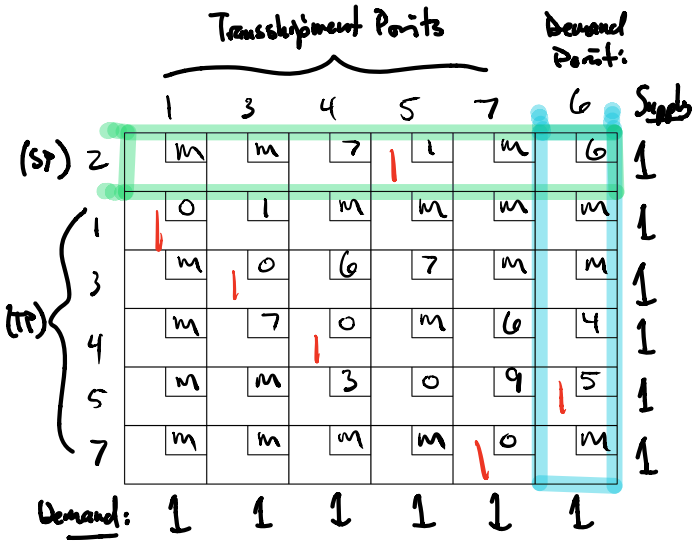
Min Distance = 55

2.] Consider the network given below. The graph shows the permissible routes and their lengths in miles between city 1 (node 1) and seven other cities (nodes 2 to 8).



Use the grids below to formulate the shortest path problem (a) from node 1 to node 7, and (b) from node 2 to node 6.





From Excel:

Shortest Path: 1-3-2-5-6-7

Min Distance = 11

From Excel:

Shortest Path: 2-5-6

Min Distance = 6