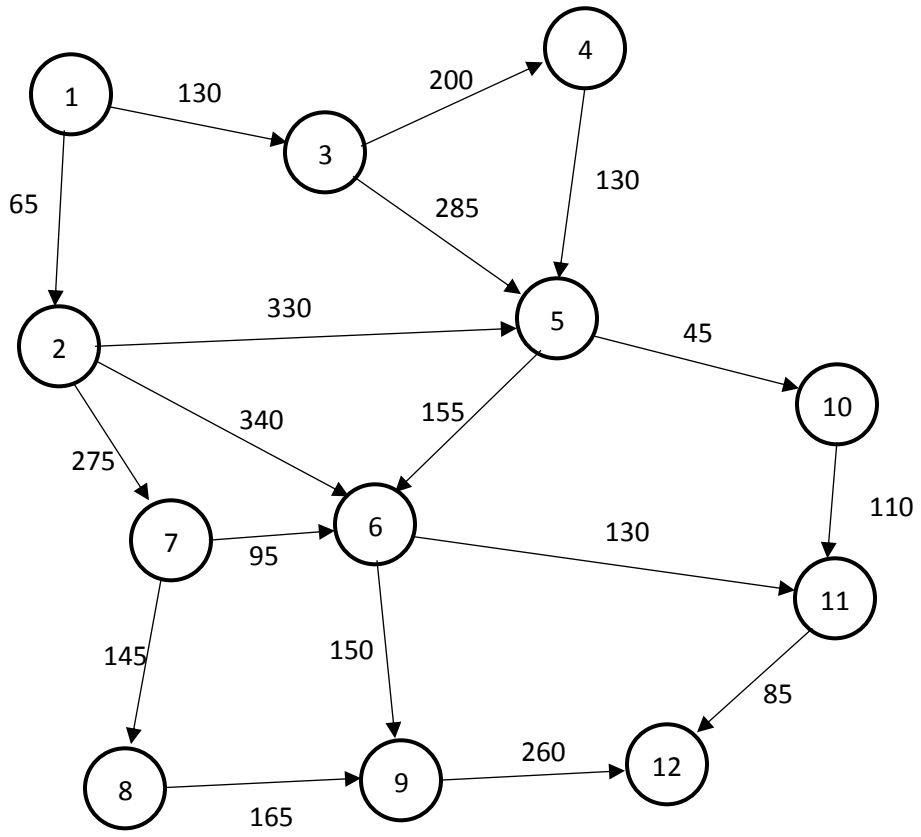
CE 45000: Transport Policy and Planning
Due Thursday, November 29, 2018

Problem 1: You estimated that total 1000 trips will be distributed between TAZ 12 and TAZ 15 among 5 different mode of transportation including carpool, taxi, bus, light rail, and solo driver. How will you distribute the trips. Use following information:

Utility function: $Ui = ai - 0.02 \cdot IVTTi - 0.04 \cdot OVTTi - 0.0026 \cdot COSTi$

MODE	Mode specific constant	IVTT (min)	OVTT (min)	COST (cent)
Solo driver	0.00	17	5	200.0
Carpool	-0.25	21	5	100.0
Taxi	-0.40	17	4	320.0
Light rail	-0.28	25	8	120.0
Bus	-0.30	33	7	160.0

Problem 2: Can you go node 1 to node 12 in 10 hours? Prove. Use Dijkstra's Algorithm.



Problem 3: A transit agency is evaluating alternatives for a light rail line construction. Five alternatives are evaluated for five different criteria (see following table). Evaluate the alternatives using ranking method.

No	Criterion (MOE)	Ranking	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
1	Daily ridership (1000s)	2	25	23	20	18	17
2	Annual return on investment (%)	1	13	14	11	13.5	15
3	Length of line (mi)	3	8	7	6	5	5
4	Passengers seated in peak hour (%)	3	25	35	40	50	50
5	Auto drivers diverted (1000s)	4	3.5	3	2	1.5	1.5