

The Cheapest Link Algorithm:

1. Select the cheapest edge, mark it.
2. Select the next cheapest edge, mark it.
3. Continue to mark the cheapest edges - do not close a circuit or make 3 edges from one vertex.
4. Connect the last 2 vertices to close the circuit.

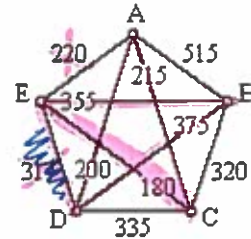
1. A rock band is planning a five-city concert tour. The cities and the distances (in miles) between them are given in the weighted graph. The tour must start and end at A. The cost of the chartered bus the band is traveling in is \$6 per mile. Find the cheapest link tour, and give the bus cost for this tour

ACEBDA

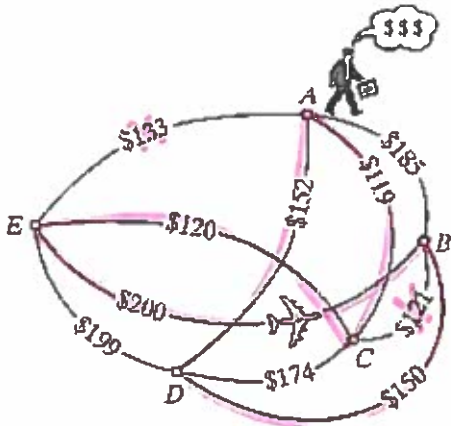
= 1325

x \$6

—————
 \$7950



2. Find the cheapest link tour and give the cost.



ACEBDA

= \$741

3. Darren is a sales representative whose territory consists of the six cities in the mileage chart. Darren wants to visit customers at each of the cities, starting and ending his trip in his home city of Atlanta. His travel costs (gas, insurance, etc.) average \$0.75 per mile. Find the cheapest link tour and give the cost for this tour.

Mileage Chart

	Atlanta	Columbus	Kansas City	Minneapolis	Pierre	Tulsa
Atlanta	*	533	798	1068	1361	772
Columbus	533	*	656	713	1071	802
Kansas City	798	656	*	447	592	248
Minneapolis	1068	713	447	*	394	695
Pierre	1361	1071	592	394	*	760
Tulsa	772	802	248	695	760	*



Atlanta → Columbus → Pierre →

Min → KC → Tulsa → Atl.

$$= 3465 \text{ miles}$$

$$\times 0.75$$

$$\$2598.75$$