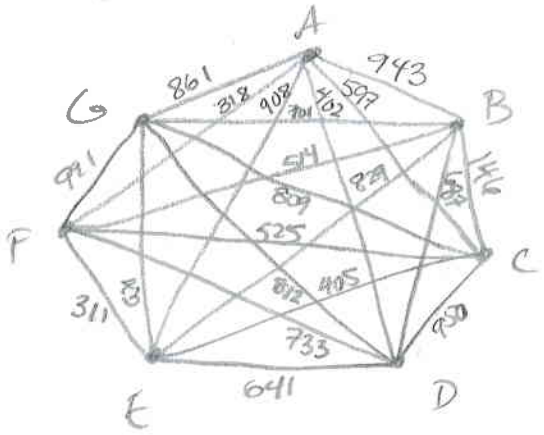
Math 1116, Quiz #9, Spring 2013 Name KEY

1. Create a graph from the following table of data below. Label the edges with the appropriate weights.

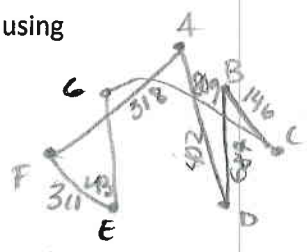
	Appleton	Barber	Cedar	Davis	Evansville	Fargo	Gainor
Appleton	-	943	597	402	908	318	861
Barber	943	-	146	687	829	514	701
Cedar	597	146	-	950	405	525	809
Davis	402	687	829	-	641	733	812
Evansville	908	829	405	641	-	311	43
Fargo	318	514	525	733	311	-	991
Gainor	861	701	809	812	43	991	-



2. Is the graph above complete? If it is, how many unique Hamilton circuits are there? If not, explain why not.

Yes, it is complete $n=7$ $\frac{(7-1)!}{2} = \frac{6!}{2} = \frac{720}{2} = 360$

3. Approximate an optimal Hamilton circuit using
   a. Cheapest Link (Sorted Edges)



43+311+318+402+
687+146+809=

2716

   b. Nearest Neighbor (starting at Fargo).

F-E-G-B-C-A-D-F = 2933

311+43+701+146-597+402+733