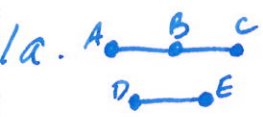


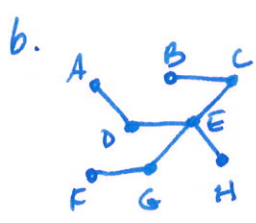
MAT 100 Homework #10 Key



Not Connected

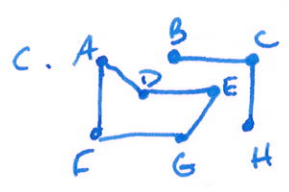


degree 2 vertices $\{B, G\}$,
 degree 1 vertices $\{A, C, D, E, F, H\}$



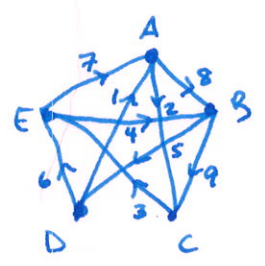
degree 1 vertices $\{A, F, H, B\}$
 degree 2 vertices $\{C, D, G\}$
 degree 4 vertices $\{E\}$

Connected

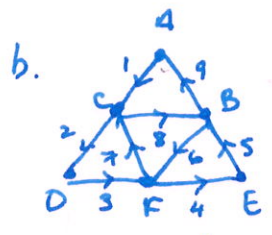


Not connected
 degree 1 vertices $\{B, H\}$
 degree 2 vertices $\{C, A, D, E, F, G\}$

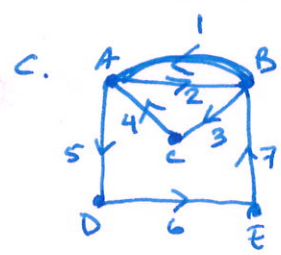
2. a. Euler path, 2 odd vertices



Start at D or C
 end at the other one

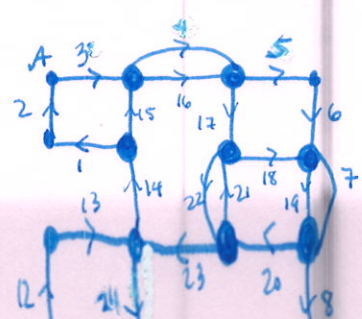
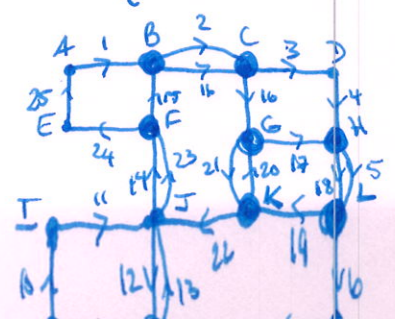


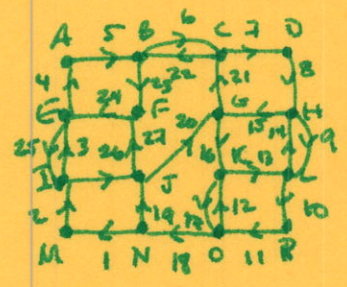
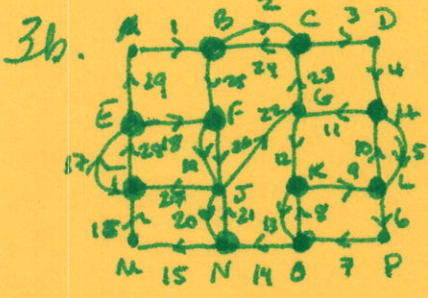
Euler circuit



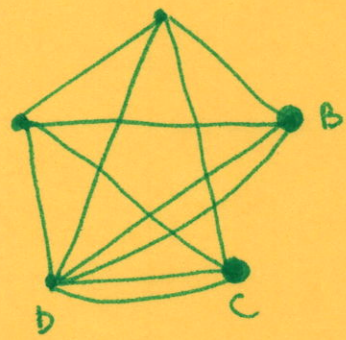
Euler circuit

3. a.





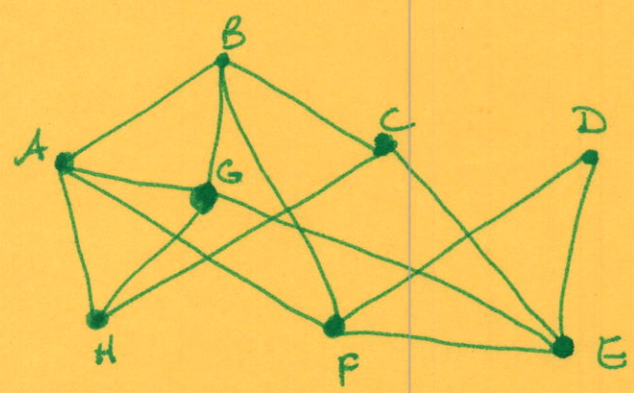
4.



add copy of
 $BD + DC = 16$
 $BA + AC = 18$
 $BE + EC = 17$

This is the lowest cost Euler circuit
 any circuit using these edges works

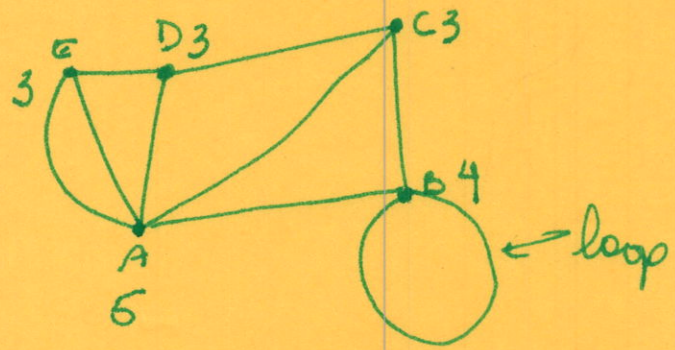
5.



$V: \{A, B, C, D, E, F, G, H\}$

$E: \{AB, AG, AF, AH, BG, BF, BC, CH, CE, DF, DE, FG, EG, GH\}$

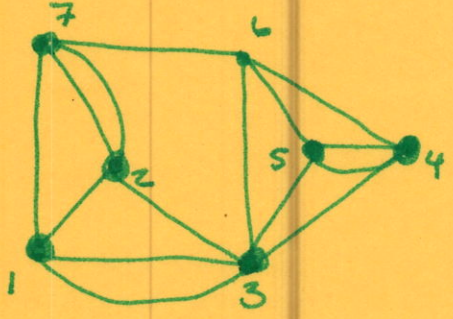
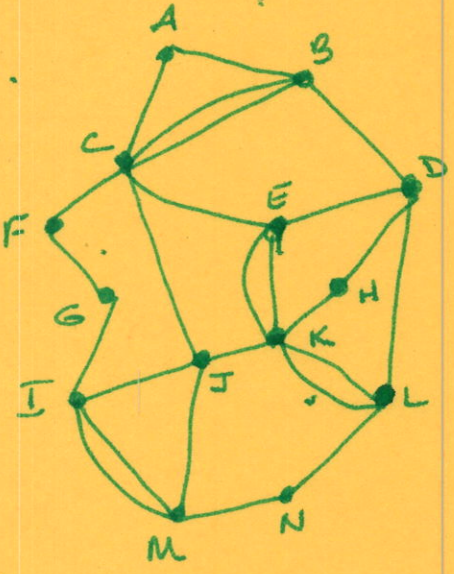
6.



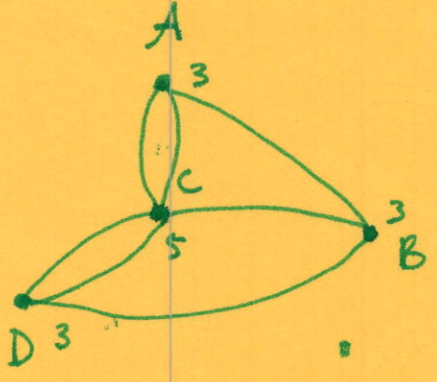
7. GH is the only bridge



8.

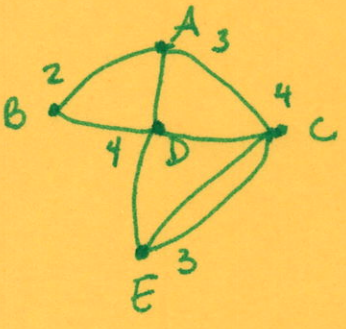


9.



no circuit or path exists

10.



an Euler path exists

11.

