**COMP 375 (Computer Networks): Quiz #8**
Friday, April 27, 2018

Name: _____**SOLUTIONS**_____

1. Assume we have the following network and are using the distance-vector routing algorithm. Fill in the **routing tables** for each of the routers after Rounds 0 and 1 of advertisements are sent out. Follow the same assumptions we did in our in-class example, namely that advertisements are synchronous and that in Round 0, all we know about are the costs to our neighbors.
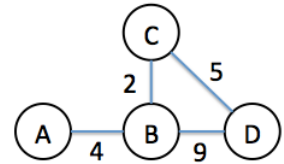
Round 0 (i.e. Initial) Routing Tables:

Router A

Via → / To ↓	B
B	4
C	
D	

Router B

Via → / To ↓	A	C	D
A	4		
C		2	
D			9

Router C

Via → / To ↓	B	D
A		
B	2	
D		5

Router D

Via → / To ↓	B	C
A		
B	9	
C		5

Round 1 Routing Tables:

Router A

Via → / To ↓	B
B	4
C	6
D	13

Router B

Via → / To ↓	A	C	D
A	4		
C		2	14
D		7	9

Router C

Via → / To ↓	B	D
A	6	
B	2	14
D	11	5

Router D

Via → / To ↓	B	C
A	13	
B	9	7
C	11	5

2. Explain the major benefit of using "hot potato" routing in an autonomous system (AS) as compared to cold potato routing.

Hot potato's main benefit is that it minimizes the amount of resources, namely bandwidth, used by the AS. This is because it routes based on the shortest path to get it out of the AS while still making sure it gets along an external path to get it to its destination. By taking the shortest path to get it out of the AS, rather than the possibly longer path to get it closest to its external destination, the AS links are used less so their bandwidth usage is lower.