(c) None of the subnet number entries match, so use default Router R4.

(d) Applying subnet mask 255.255.254.0, we get 128.96.168.0. Use interface 1 as the next hop.

(e) Applying subnet mask 255.255.252.0, we get 128.96.164.0. Use Router 3 as the next hop.

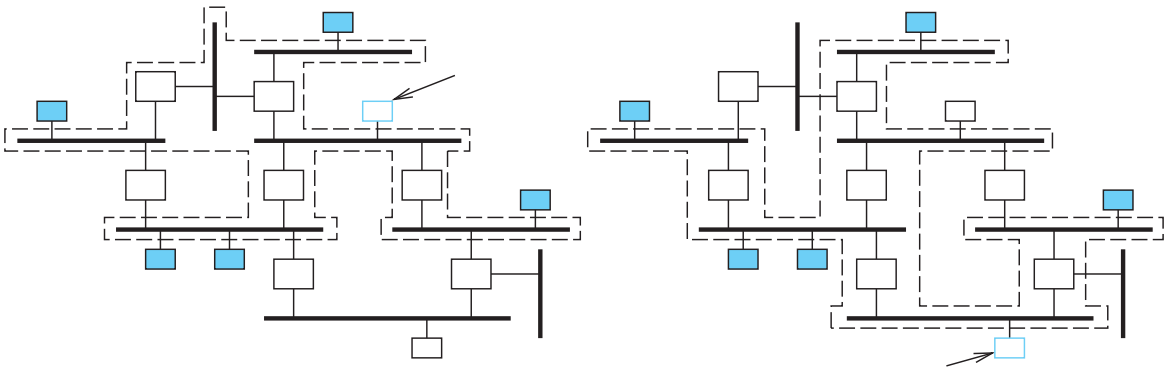
63.

Step	Confirmed	Tentative
1	(A,0,-)	
2	(A,0,-)	(B,1,B) (D,5,D)
3	(A,0,-) (B,1,B)	(D,4,B) (C,7,B)
4	(A,0,-) (B,1,B) (D,4,B)	(C,5,B) (E,7,B)
5	(A,0,-) (B,1,B) (D,4,B) (C,5,B)	(E,6,B)
6	(A,0,-) (B,1,B) (D,4,B) (C,5,B) (E,6,B)	

73. **(a)** F **(b)** B **(c)** E **(d)** A **(e)** D **(f)** C

CHAPTER 4

15. The following figures illustrate the multicast trees for sources D and E.



CHAPTER 5

10. The advertised window should be large enough to keep the pipe full; delay (RTT) $\times$ bandwidth here is 140 ms $\times$ 1 Gbps = 10 Mb = 17.5 MB of data. This requires 25 bits ($2^{25} = 33,554,432$) for the

AdvertisedWindow field. The sequence number field must not wrap around in the maximum segment lifetime. In 60 seconds, 7.5 GB can be transmitted. 33 bits allows a sequence space of 8.6 GB, and so will not wrap in 60 seconds.

13. **(a)** 2^{32} B / (5 GB) = 859 ms.
(b) 1000 ticks in 859 ms is once each 859 μs indicating wrap around in 3.7 Ms or approximately 43 days.

27. Using initial Deviation = 50 it took 20 iterations for TimeOut to fall below 300.0.

Iteration	SampleRTT	EstRTT	Dev	diff	TimeOut
0	200.0	90.0	50.0		
1	200.0	103.7	57.5	110.0	333.7
2	200.0	115.7	62.3	96.3	364.9
3	200.0	126.2	65.0	84.3	386.2
4	200.0	135.4	66.1	73.8	399.8
5	200.0	143.4	66.0	64.6	407.4
6	200.0	150.4	64.9	56.6	410.0
7	200.0	156.6	63.0	49.6	408.6
8	200.0	162.0	60.6	43.4	404.4
9	200.0	166.7	57.8	38.0	397.9
10	200.0	170.8	54.8	33.3	390.0
11	200.0	174.4	51.6	29.2	380.8
12	200.0	177.6	48.4	25.6	371.2
13	200.0	180.4	45.2	22.4	361.2
14	200.0	182.8	42.0	19.6	350.8
15	200.0	184.9	38.9	17.2	340.5
16	200.0	186.7	36.0	15.1	330.7
17	200.0	188.3	33.2	13.3	321.1
18	200.0	189.7	30.6	11.7	312.1
19	200.0	190.9	28.1	10.3	303.3
20	200.0	192.0	25.8	9.1	295.2