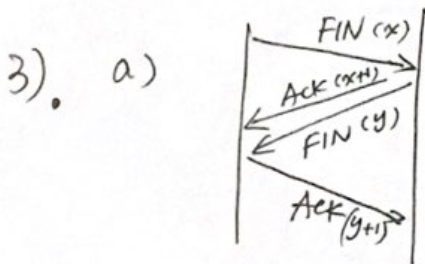Exam #2 Solution

1). a) $t = \dfrac{2^{32} \times 8}{1.28 \times 10^9} = \boxed{26.84 \text{ sec}}$

b) $t = \dfrac{2^{32} \times 8 \times 2^n}{1.28 \times 10^9} > 120$

$35 + n > 37.16 \implies n > 2.16 \implies \boxed{n = 3}$

2). $B5 \to B$ is trimmed.
$B5 \to F$

3). a)

b) BGP is to find a <u>reachable</u> path to an autonomous system (AS).

c) Sparse Mode: when there are not many subscribers/receivers.

d) UDP: streaming services that do not require high reliability.

e) count-to-infinity problem.
split horizon & set an upper bound for cost.

f) edge router puts an additional header and enables a IP tunnel to transmit packets to the destination edge router.

4). a) router 1   b) Router 3/default   c) Interface 0   d) Interface 2

5) Next page ➡

5)

	A	B	C	D	E
A	—	2	3	∞	∞
B	2	—	∞	3	∞
C	1	∞	—	1	∞
D	∞	3	1	—	1
E	∞	∞	∞	1	—

Node C

Dest	cost	Nexthop
A	1	A
B	—	—
D	1	D
E	—	—

	A	B	C	D	E
A	—	2	3	4	∞
B	2	—	4	3	4
C	1	3	—	1	2
D	2	3	1	—	1
E	∞	4	2	1	—

Node C

Dest.	cost	Nexthop
A	1	A
B	3	A
D	1	D
E	2	D

	A	B	C	D	E
A	—	2	3	4	5
B	2	—	4	3	4
C	1	3	—	1	2
D	2	3	1	—	1
E	3	4	2	1	—

Node C

Dest.	cost	Nexthop
A	1	A
B	3	A
D	1	D
E	2	D

6.

Bridge1		Bridge 2		Bridge 3	
Dest.	Interface	Dest.	Interfae	Dest.	Interface
A	B2	A	A	A	B2
B	B3	B	B3	B	B
C	unknown	C	C	C	unknown
D	B3	D	B3	D	D