1

(a) 101100011011001

(b)

(i) O

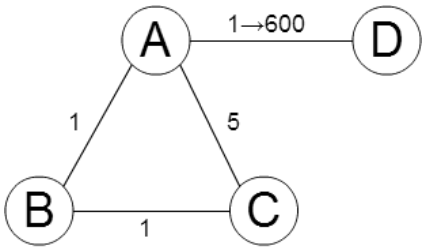
(ii) ::: 錯誤

(iii) Double :: 錯誤

(iv) O

(v) 00FF 改為 FFFF

(c) No, for example



For A, AD = 1 (BD = ∞) CD = 3

After AD→600, A 發現 CD 只要 3

此時 BD = 9, CD = 10, AD = 15

則 BD = 16, CD = 17, AD = 22

則 BD = 23, CD = 24, AD = 29…. Count to infinity

2

(a) 3 iterations

initial

	A	B	C	D	E
A	0	(B,5)	∞	(D,1)	∞
B	(A,5)	0	(C,3)	(D,1)	(E,1)
C	∞	(B,3)	0	∞	(E,5)
D	(A,1)	(B,1)	∞	0	(E,4)
E	∞	(B,1)	(C,5)	(D,4)	0

iteration 1

	A	B	C	D	E
A	0	(D,2)	(B,8)	(D,1)	(D,5)
B	(D,2)	0	(C,3)	(D,1)	(E,1)
C	(B,8)	(B,3)	0	(B,4)	(B,4)
D	(A,1)	(B,1)	(B,4)	0	(B,2)
E	(D,5)	(B,1)	(B,4)	(B,2)	0

iteration 2

	A	B	C	D	E
A	0	(D,2)	(D,5)	(D,1)	(D,3)
B	(D,2)	0	(C,3)	(D,1)	(E,1)
C	(B,5)	(B,3)	0	(B,4)	(B,4)
D	(A,1)	(B,1)	(B,4)	0	(B,2)
E	(B,3)	(B,1)	(B,4)	(B,2)	0

iteration 3

"same as iteration 2"

forwarding table

destination	next hop	cost
B	D	2
C	D	5
D	D	1
E	D	3

(b) L-S algorithm

	D(B), P(B)	D(C), P(C)	D(D), P(D)	D(E), P(E)
A	5, A	∞	1, A	∞
AD	2, D	∞		5, D
ADB		5, B		3, B
ADBE		5, B		
ADBEC				

forwarding table

destination	next hop	cost
B	D	2
C	D	5
D	D	1
E	D	3

3 1044 → 20 + 1000 →20 + 488

20 + 488

20 + 24

→ 20 + 44

Length (Data + IP header)	Offset	Flag
508	0	1
508	61	1
44	122	1
64	125	0

4

(a) Probability = $[1 - \mathrm{p}(1 - \mathrm{p})]^4 p(1 - p)$

Efficiency = $2\mathrm{p}(1 - \mathrm{p})$ or $\mathrm{Np}(1 - \mathrm{p})$

(b) No, 311 + 312 = 623 > 576 (Ethernet Min. Packet Size)

5

	S1	S2	S3
Event 1	Mac X, 1	Mac X, 1	Mac X, 1
Event 2	Mac Z, 2	Mac Z, 3	Mac Z, 3
Event 3	Mac Y, 2	Mac Y, 2	
Moving	Nothing		
Event 4	Mac Y, 3		
Event 5		Mac W, 2	Mac W, 1