Looking Beyond Traditional Network Routing

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1 Exercise 15

1.1 Part (a)

Distance to reach node						
Information stored at node	A	B	C	D	E	F
A	0	∞	3	8	∞	∞
B	∞	0	∞	∞	2	∞
C	3	∞	0	∞	1	6
D	8	∞	∞	0	2	∞
E	∞	2	1	2	0	∞
F	∞	∞	6	∞	∞	0

1.2 Part (b)

Distance to reach node						
Information stored at node	A	B	C	D	E	F
A	0	∞	3	8	4	9
B	∞	0	3	4	2	∞
C	3	3	0	3	1	6
D	8	4	3	0	2	∞
E	4	2	1	2	0	7
F	9	∞	6	∞	7	0

1.3 Part (c)

Distance to reach node						
Information stored at node	A	B	C	D	E	F
A	0	6	3	8	4	9
B	6	0	3	4	2	9
C	3	3	0	3	1	6
D	8	4	3	0	2	9
E	4	2	1	2	0	7
F	9	9	6	9	7	0

2 Exercise 40

2.1 Part (a)

For A: Number of hosts = 72, Subnet size = 2^7 = 128. Maximum hosts = 2^7 - 2 = 126.
Masking address: 255.255.255.128, Network Address: 200.1.1.0

For B: Number of hosts = 35, Subnet size = 2^6 = 64. Maximum hosts = 2^6 - 2 = 62.
Masking address: 255.255.255.192, Network Address: 200.1.1.128

For C: Number of hosts = 20, Subnet size = 2^5 = 32. Maximum hosts = 2^5 - 2 = 30.
Masking address: 255.255.255.224, Network Address: 200.1.1.192

For D: Number of hosts = 18, Subnet size = 2^5 = 32. Maximum hosts = 2^5 - 2 = 30.
Masking address: 255.255.255.224, Network Address: 200.1.1.224

2.2 Part(b)

In order to solve this problem, we assign several subnets to a single department(split). Since A wants 72 hosts, the remaining can be allotted to D. Hence:
A1 = 200.1.1.0 - 200.1.1.31
A2 = 200.1.1.32 - 200.1.1.63
A3 = 200.1.1.64 - 200.1.1.95
Subnet of B = 200.1.1.96 - 200.1.1 .159
Subnet of C = 200.1.1.160 to 200.1.1.191
Subnet of D = 200.1.1.192 to 200.1.1.255