1.Suppose a destination receives the following set of IPv4 fragments in that order. Would it be able to reassemble the original IPv4 datagram? If so, give its length? If not, why not? Answer each of the following cases.

Total length	More fragment	Fragment offset
1020	1	125
500	0	375
1020	1	250

不能，缺少第一个分片。

Total length	More fragment	Fragment offset
1020	1	125
1020	1	0
512	1	250

不能，缺少 More fragment 值为 0（即最后一片）的分片。

2、

Destination Network Address	Network Mask	Next Hop
132.17.128.0 132.17.128.0 196.6.80.0 196.6.0.0 0.0.0.0	255.255.128.0 255.255.192.0 255.255.255.192 255.255.0.0 0.0.0.0	R1 R2 R3 R4 R5

Where will the router send packets addressed to each of the following destinations? Why?

a) 132.17.97.1
b) 132.17.231.98
c) 196.6.80.10
d) 196.6.80.100
e) 132.17.135.47

网络号 a：132.17.01100001.00000001 & 255.255.10000000.00000000
=132.17.00000000.00000000
132.17.01100001.00000001 & 255.255.11000000.00000000

=132.17.01000000.00000000
与第一项第二项都不匹配，由缺省路由输出，即发送到 R5。

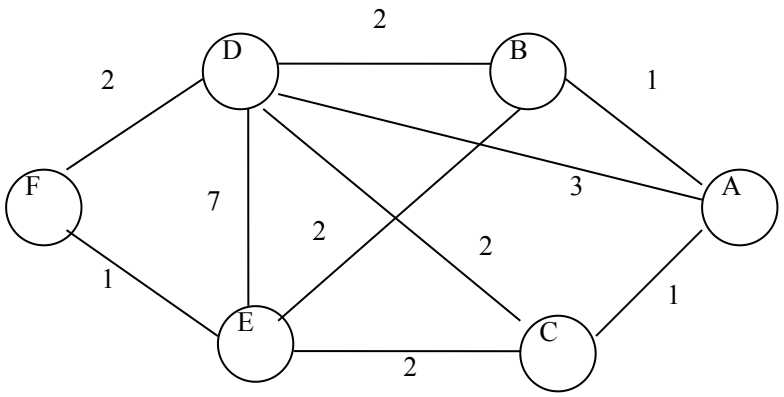
网络号 b：132.17.11100111.01100010 & 255.255.10000000.00000000
=132.17.10000000.00000000 与第一项匹配
132.17.11100111.01100010 & 255.255.11000000.00000000
=132.17.11000000.00000000 与第二项不匹配
故发送到 R1。

网络号 c：196.6.01010000.00001010 & 255.255.255.11000000
=196.6.01010000.00000000 与第三项匹配
196.6.01010000.00001010 & 255.255.0.0
=196.6.0.0 与第四项匹配
根据最长匹配原则，应当与第三项匹配，发送到 R3。

网络号 d：196.6.01010000.01101000 & 255.255.255.11000000
=196.6.01010000.01000000 与第三项不匹配
196.6.01010000.01101000 & 255.255.0.0
=196.6.0.0 与第四项匹配
故发送到 R4

网络号 e:132.17.135.47 & 255.255.10000000.00000000
=132.17.128.0 与第一项匹配
132.17.135.47 & 255.255.11000000.00000000
=132.17.128.0 与第二项匹配
根据最长匹配原则，应当与第二项匹配。发送到 R2。

3. Consider the network shown below where the number on a link between two nodes is the distance between them.

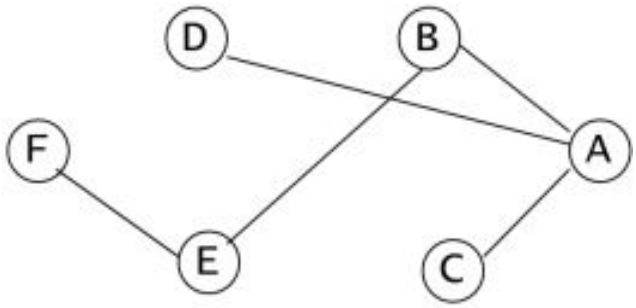


a) Use Dijkstra’s shortest path algorithm to find the shortest path from A to all other network nodes. Show how the algorithm works by completing

the table below the figure.

Step	startN	D(B),p(B)	D(C),p(C)	D(D),p(D)	D(E),p(E)	D(F),p(F)
0	A	1,A	1,A	3,A	∞	∞
1	AB		1,A	3,A	3,B	∞
2	ABC			3,A	3,B	∞
3	ABCD				3,B	5,D
4	ABCDE					4,E
5	ABCDEF					

b) What is the resulting shortest paths tree and routing table?



路由表：

目的网络	下一跳
B	B
C	C
D	C
E	B
F	B