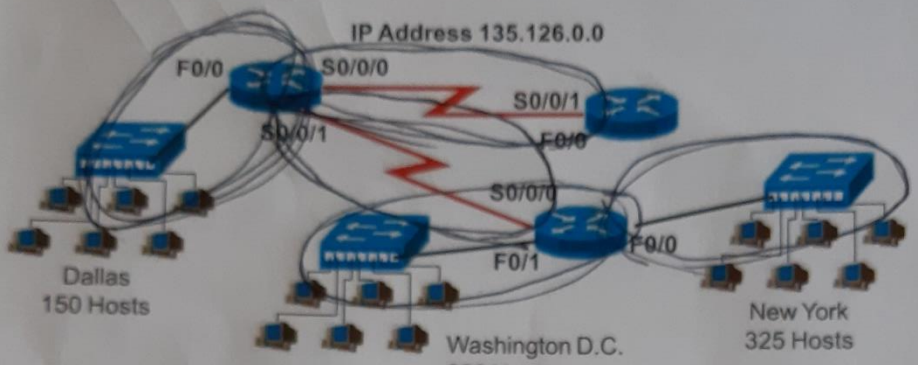
Practical Subnetting 4

Based on the information in the graphic shown, design a network addressing scheme that will supply the **minimum number of subnets**, and allow enough extra subnets and hosts for 70% growth in all areas. Circle each subnet on the graphic and answer the questions below.



Address class B

Custom subnet mask 255.255.240.0

Minimum number of subnets needed 5

Extra subnets required for 70% growth (Round up to the next whole number) + 4

Total number of subnets needed = 9

Number of host addresses in the largest subnet group 325

Number of addresses needed for 70% growth in the largest subnet (Round up to the next whole number) + 228

Total number of address needed for the largest subnet = 553

Start with the first subnet and arrange your sub-networks from the largest group to the smallest.

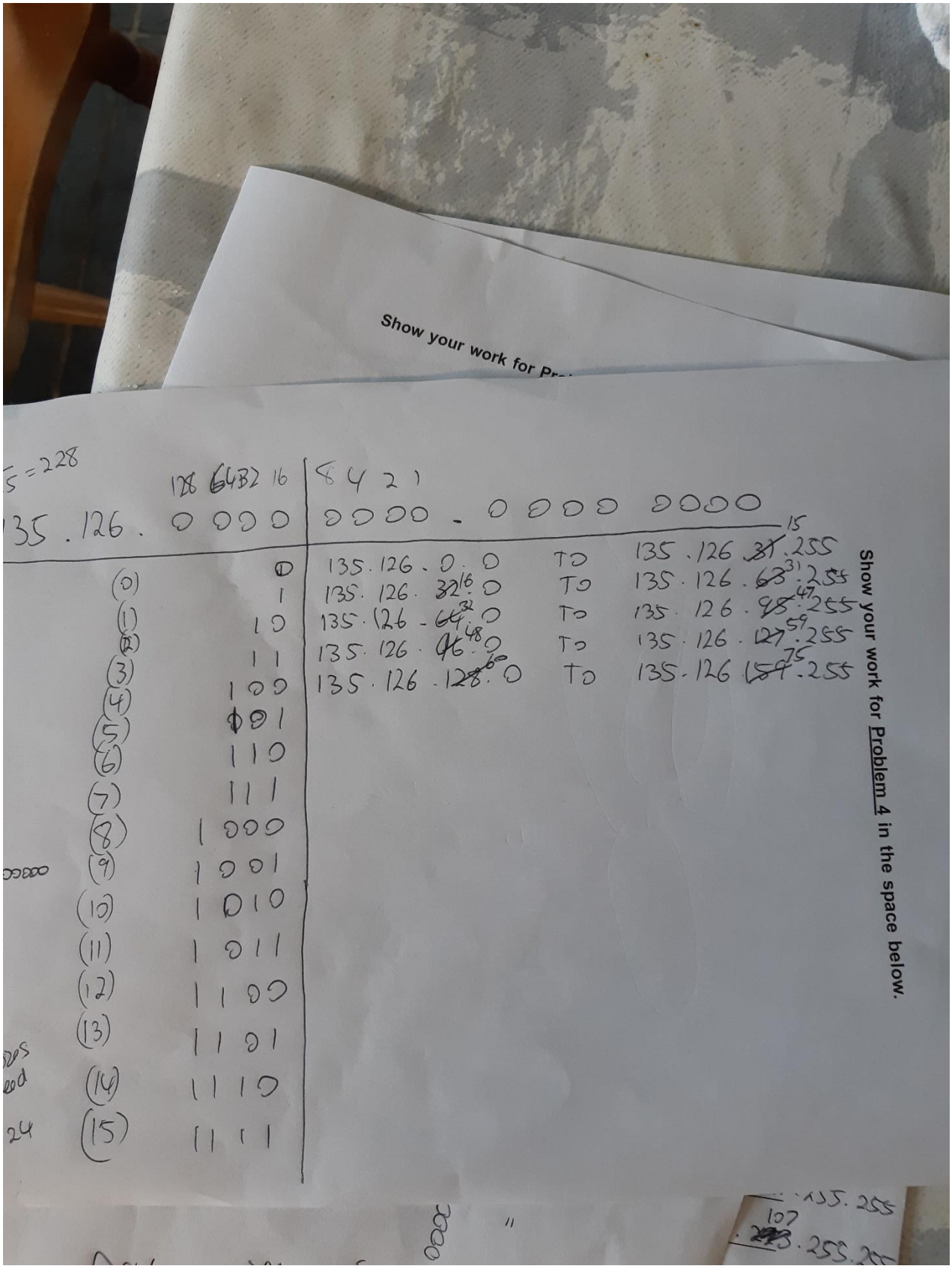
IP address range for New York 135.126.0.0 To 135.126.~~31~~ 15.255

IP address range for Washington D. C. 135.126.~~32~~ 16.0 To 135.126.~~63~~ 31.255

IP address range for Dallas 135.126.~~64~~ 32.0 To 135.126.~~95~~ 47.255

IP address range for Router A to Router B serial connection 135.126.~~96~~ 48.0 To 135.126.~~127~~ 59.255

IP address range for Router A to Router C serial connection 135.126.~~128~~ 60.0 To 135.126.~~159~~ 75.255



Show your work for Problem 4 in the space below.

128 64 32 16 | 8 4 2 1

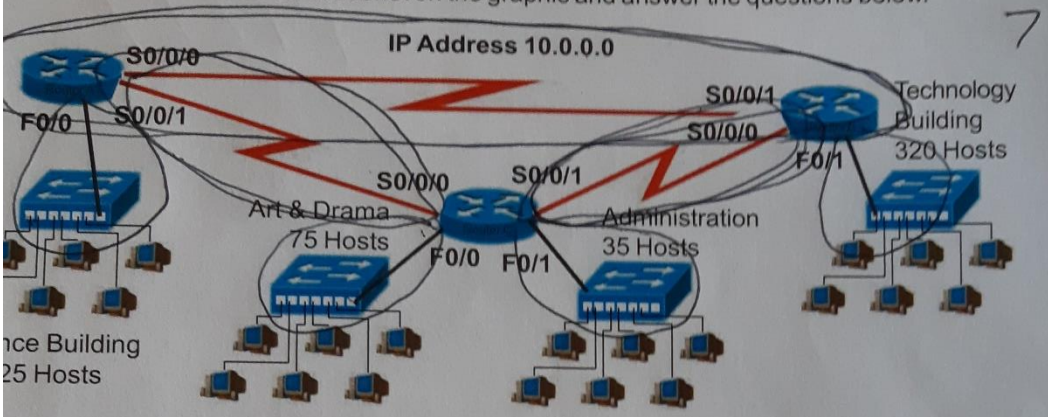
135 . 126 . 0 0 0 0 | 0 0 0 0 . 0 0 0 0 0 0 0 0

(0)	0	135.126.0.0	TO	135.126.31.255
(1)	1	135.126.32.0	TO	135.126.63.255
(2)	10	135.126.64.0	TO	135.126.95.255
(3)	11	135.126.96.0	TO	135.126.127.255
(4)	100	135.126.128.0	TO	135.126.159.255
(5)	101			
(6)	110			
(7)	111			
(8)	1000			
(9)	1001			
(10)	1010			
(11)	1011			
(12)	1100			
(13)	1101			
(14)	1110			
(15)	1111			

Practical Subnetting 6

ased on the information in the graphic shown, design a network addressing scheme that will
pply the **minimum number of subnets**, and allow enough extra subnets and hosts for 20%
owth in all areas. Circle each subnet on the graphic and answer the questions below.

7



Address class A

Custom subnet mask 10.240.0.0

inimum number of subnets needed 7

a subnets required for 20% growth + 2
(Round up to the next whole number)

Total number of subnets needed = 9

t with the first subnet and arrange your sub-networks from the largest group to the smallest.

IP address range for Technology 10.0.0.0 To 10.~~31~~15.255.255

IP address range for Science 10.~~32~~16.0.0 To 10.~~63~~31.255.255

IP address range for Arts & Drama 10.~~64~~32.0.0 To 10.~~95~~47.255.255

IP Address range Administration 10.~~96~~48.0.0 to 10.~~127~~59.255.255

IP address range for Router A to Router B serial connection 10.~~128~~60.0.0 To 10.~~131~~75.255.255

IP address range for Router A to Router C serial connection 10.~~160~~76.0.0 to 10.~~191~~91.255.255

IP address range for Router B to Router C serial connection 10.~~192~~92.0.0 To 10.~~223~~107.255.255

=16

	8 4 2 1			
0000	0000 . 0000	0000 . 0000	0
(0) 0	10.0.0.0	To	10.31.255.255
(1) 1	10.32.0.0	To	10.63.255.255
(2) 10	10.64.0.0	To	10.95.255.255
(3) 11	10.96.0.0	To	10.127.255.255
(4) 100	10.128.0.0	To	10.159.255.255
(5) 101	10.160.0.0	To	10.191.255.255
(6) 110	10.192.0.0	To	10.223.255.255

1 0000 . 0000 0000 . 0000 0000