Q8. 35.78.90.0 /28.

32 bit − 28 bit = 4 bit

$2^4 = 16$ → 16 addresses

240

255 255 255 240

11111111.11111111.11111111.11110000

Network | Host

Q9

a) 2 subnet with 18 available IP

18 + 2 = 20 closest 2's factor of $2^5 = 32$

$2^5 = 32$

32 − 5 = 27

11111111.11111111.11111111.11100000

255 255 255 224

Network address and broadcast varies by 32: 220.100.202.0

b) 2 subnet, 31 available IP

31 + 2 = 33 closest 2's factor of $2^6 = 64$

32 − 6 = 26

11111111.11111111.11111111.11000000

255 255 255 192

Q10. varies by 64.

174.45.62.255 mask /22

32 − 22 = 10 We change only last 2 decimals

$2^{10} = 1024$

255 − 3 = 252

11111111.11111111.11111100.00000000

255 255 252

↑ subnet

Q11

Network 10a.44.7?

1 + 4 = 5 closest

32 − 8 = 24

Network varies

11111111.1111

255 25

$= 2^4 = 28$

2^{27} 2^5

27

2) 101.44.78.0

32 − 18 = 14

$2^{14} = 16384$

11111111.11111111

255 255

1811 = 19 cl

32 − 5 = 27

Network var

11111111.11

255

3) 101.44.79.

1 + 4 + 8 = 13

32 − 4 = 2

Network varies

11111111.

1. 48+1=49 closest $2^6=64$

Network varies by 64

11111111. 11111111. 11111111. 11000000

255 255 255 192

11. Neurology

4+1=5 closest $2^3=8$

Network varies by 8

11111. 11... 11... 11111000

255 255 255 248

Immunology

18+1 closest $= 2^5 = 32$

Network varies by 32

11... 111... 111... 11100000

255 255 255 224

3. Ophthalmology 14.

14+1=15 closest $2^4=16$

111... 111... 111... 11110000

4. Endocrinology

6+1=7 Closest $2^3=8$

Track by 8

11.111.111...1.111...11111000

255 255 255 248.

5. 48+1=49 Closest $= 2^6=64$

Network varies by 64

11111111. 11111111. 11111111. 11000000

255 255 255 192