Network King

10. 1.2.3 → dotted notation

128	64	32	16	8	4	2	1
1	0	0	1	0	1	1	0

To convert binary to decimal just add those numbers where value is 1 ⇒ 128 + 16 + 4 + 2

= 150

128	64	32	16	8	4	2	1
1	0	1	0	0	1	1	1

Taking ~~a number~~ a number what is 167 To change into binary ⇒

- Is 167 equal to or grater than 128?
- Yes
- Place a 1 in the 128 column
- Subtract 128 from 167; 167-128=39
- Is 39 equal to or greater than 64?
- NO
- Place a 0 in the 64 column
- Is 39 equal to or grater than 32?
- Yes
- Place a 1 in the 32 column
- Subtract 32 from 39; 39-32=7

- Is 7 equal to or greater than 16?
- No
- Place a 0 in the 16 column
- Is 7 equal to or grater than 8?
- No
- Place a 0 in the column
- Is 7 equal to or greater than 4?
- Yes
- Place a 1 in the column
- Subtract 4 from 7: 7-4=3
- Is 3 equal to or greater than 2?
- Yes
- Place 1 in the 2 column
- subtract 2 from 3 ! 3-2=1
- IS 1 equal to or greater than 1?
- Yes
- Place a 1 in the 1 column
- subtract 1 from 1: 1-1=0

01101011

128	64	32	16	8	4	2	1
0	1	1	0	1	0	1	1

64 + 32 + 8 + 2 + 1 = 107

49

128	64	32	16	8	4	2	1
0	0	1	1	0	0	0	1

49 - 32 = 17

17 - 16 = 1

Subnet masking

172.20.0.0/16

100 hosts

7 → 128

32 - 7

16 + 9 = 25

255.255.255.128

~~(2) 172.16.k.10/19~~

(3) - 26 bit subnet mask = 255.255.255.192

- The last octet to contain a binary 1 in the subnet mask is the fourth octet

- Determine the block size

  - Block size = 256 − subnet mask value of interesting octet

  - Block size = 256 − 192 = 64

- Determine the first subnet by leaving all borrowed bits and hosts bits at 0

  - 192.168.0.0/26

- Determine additional subnets by counting by the block size in the interesting octet

  - 192.168.0.0
  - 192.168.0.64
  - 192.168.0.128
  - 192.168.0.192

Subnet	Directed Broadcast	Usable Range of IP Addresses
192.168.0.0	192.168.0.63	192.168.0.1 - 192.168.0.62
192.168.0.64	192.168.0.127	192.168.0.65 - 192.168.0.126
192.168.0.128	192.168.0.191	192.168.0.192 - 192.168.0.190
192.168.0.192	192.168.0.255	192.168.0.193 - 192.168.0.254

Broad cast address → 172.16.0.0/16

10101100.00010000.00000000.00000000

after the sider rage /16 or the bit number of used in ip → after than all bit untill 32 will fill of 1's

* This ip is 16 bit so other 16 bit will fill by 1's

10101100.00010000.11111111.11111111

→ 172.16.255.255 is the broadcasting Ip.

* 192.168.10.0

subnet → /25

⇒ 255.255.255.128