

lets begin in 5 mins

- 1) Basics
- 2) DPP → Doubts → platform
- 3) TS → few subjects
- 4) PYQ → Solved after each topic

Class timings \rightarrow 7:00 pm \rightarrow ? topic

Deadlines \rightarrow Topic \rightarrow 1 hr, 2 hr, 3 hr, 4 hrs.

Total hours \rightarrow gate \rightarrow Scared $\frac{11 \text{ pm}}{15 \text{ min.}}$

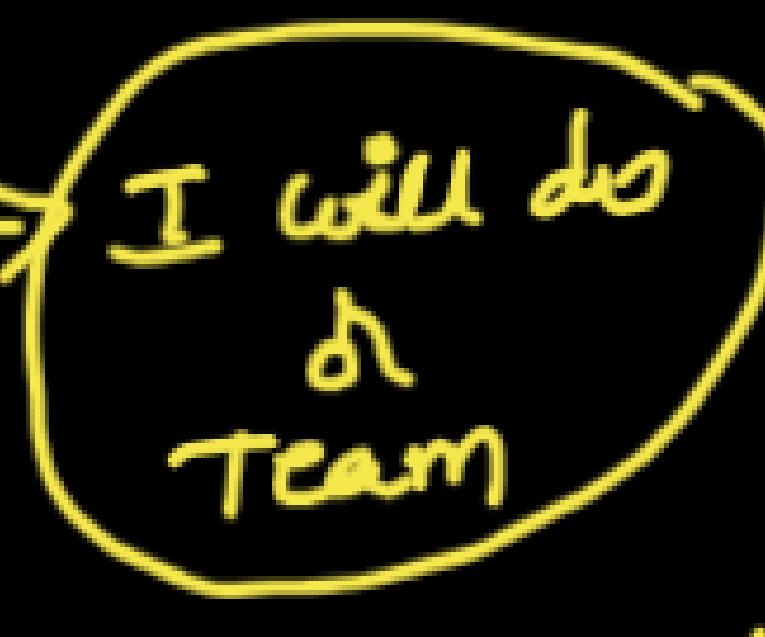
Lecture notes \rightarrow witters \rightarrow download 11:15

Smart board \rightarrow Too big \rightarrow mbe time

\times Repeat any topic \rightarrow slow \rightarrow Recorded lecture.

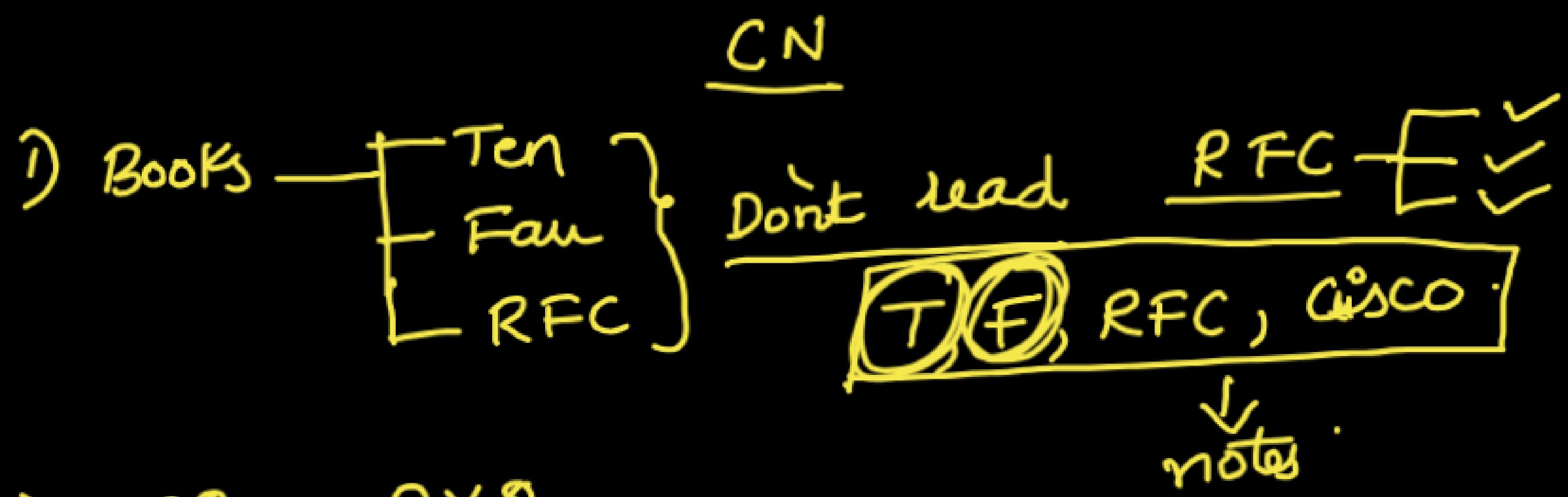
on WA Group → lot messages → 1000

Dow → G →

Subject due → platform → 
I will do
or
Team

motivation →

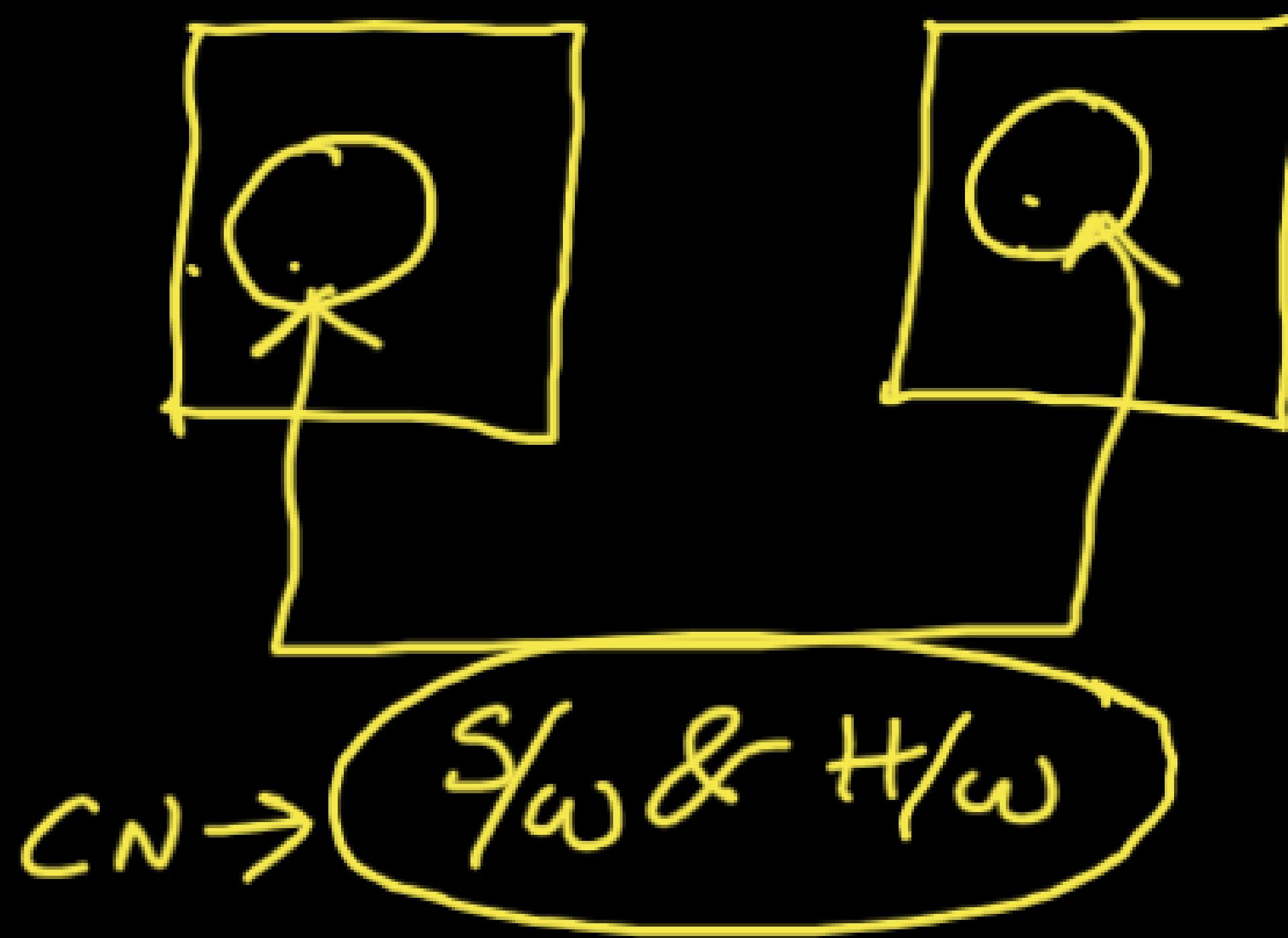
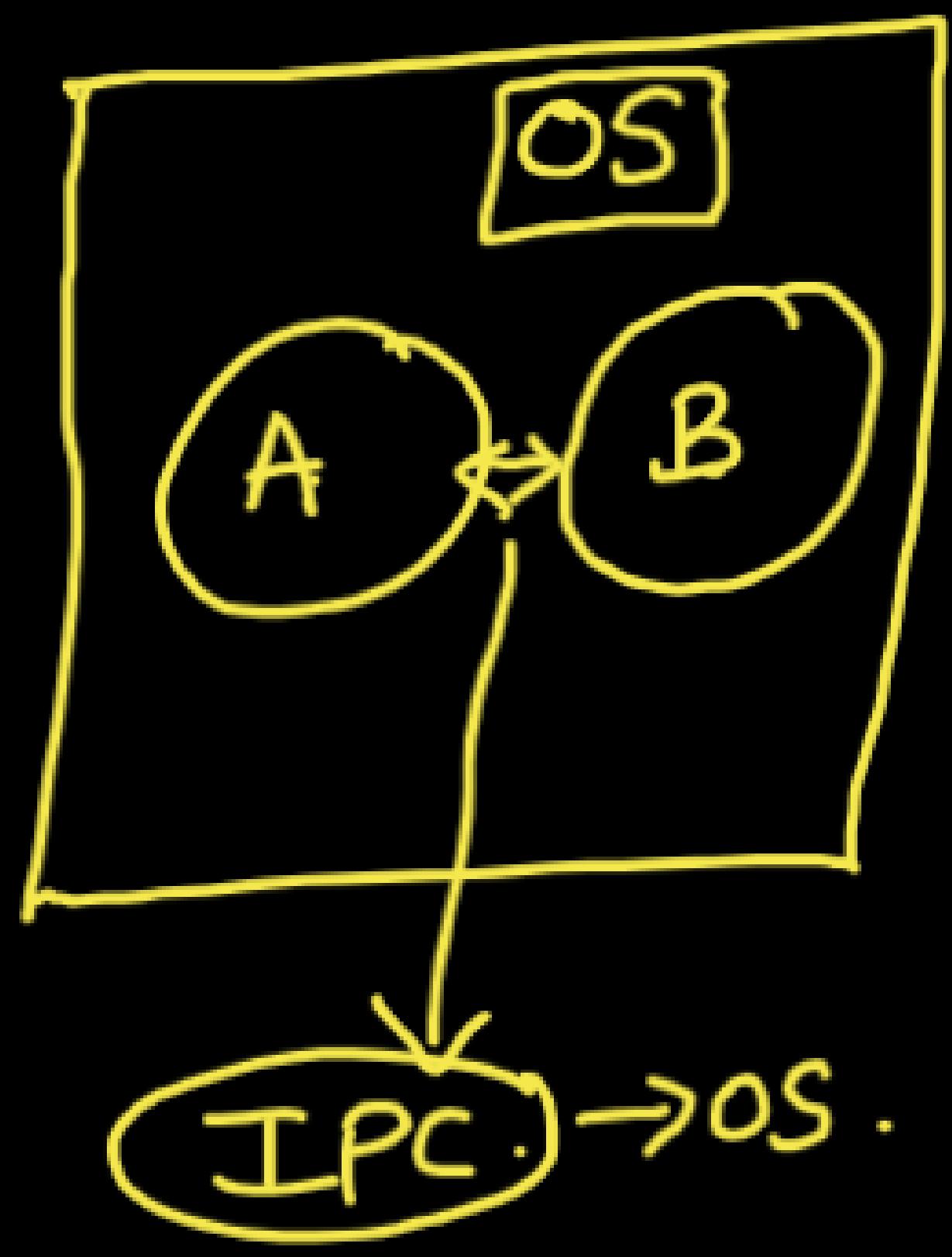
gate 2014. Ravindra@gmail.com

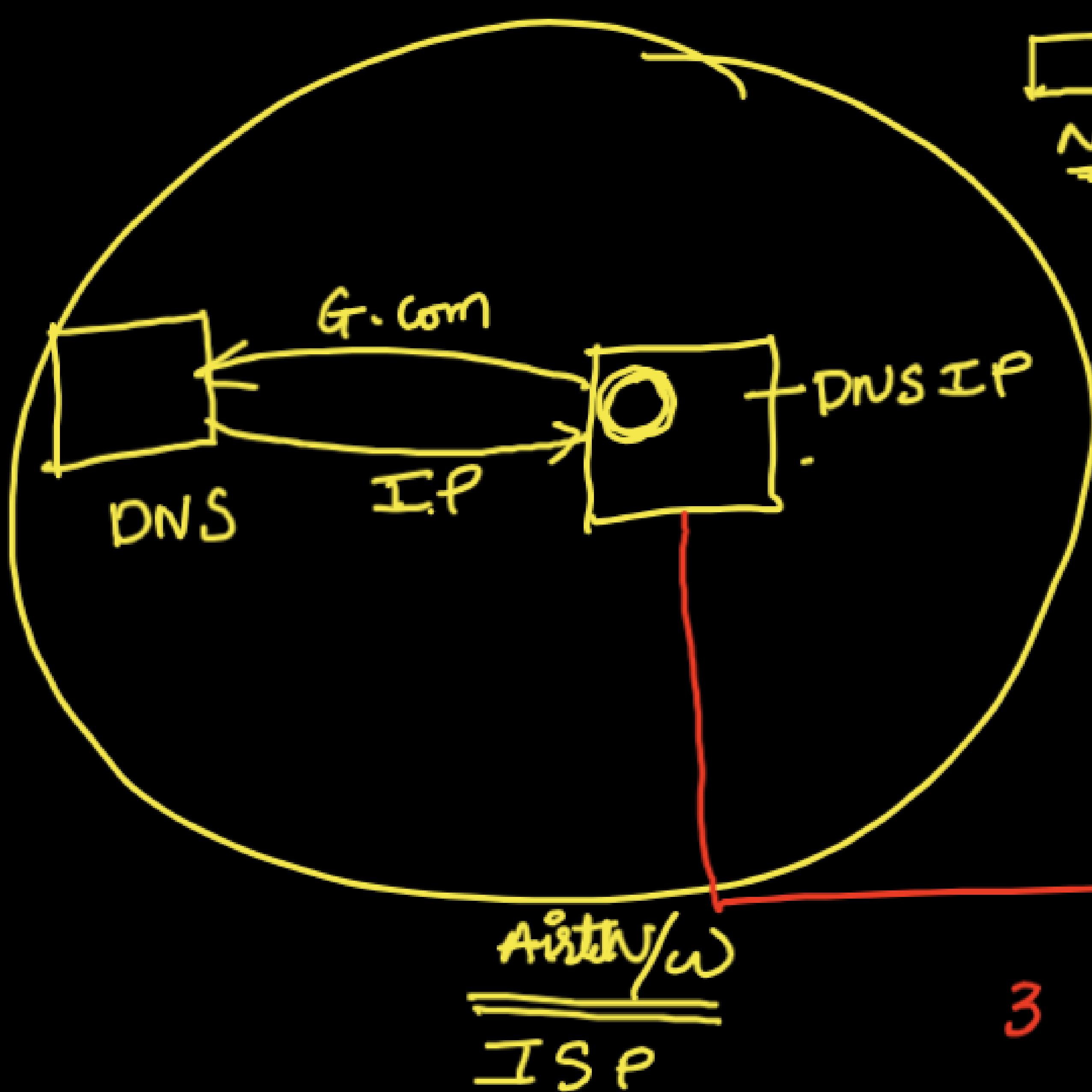


2) PQA, PYQA.

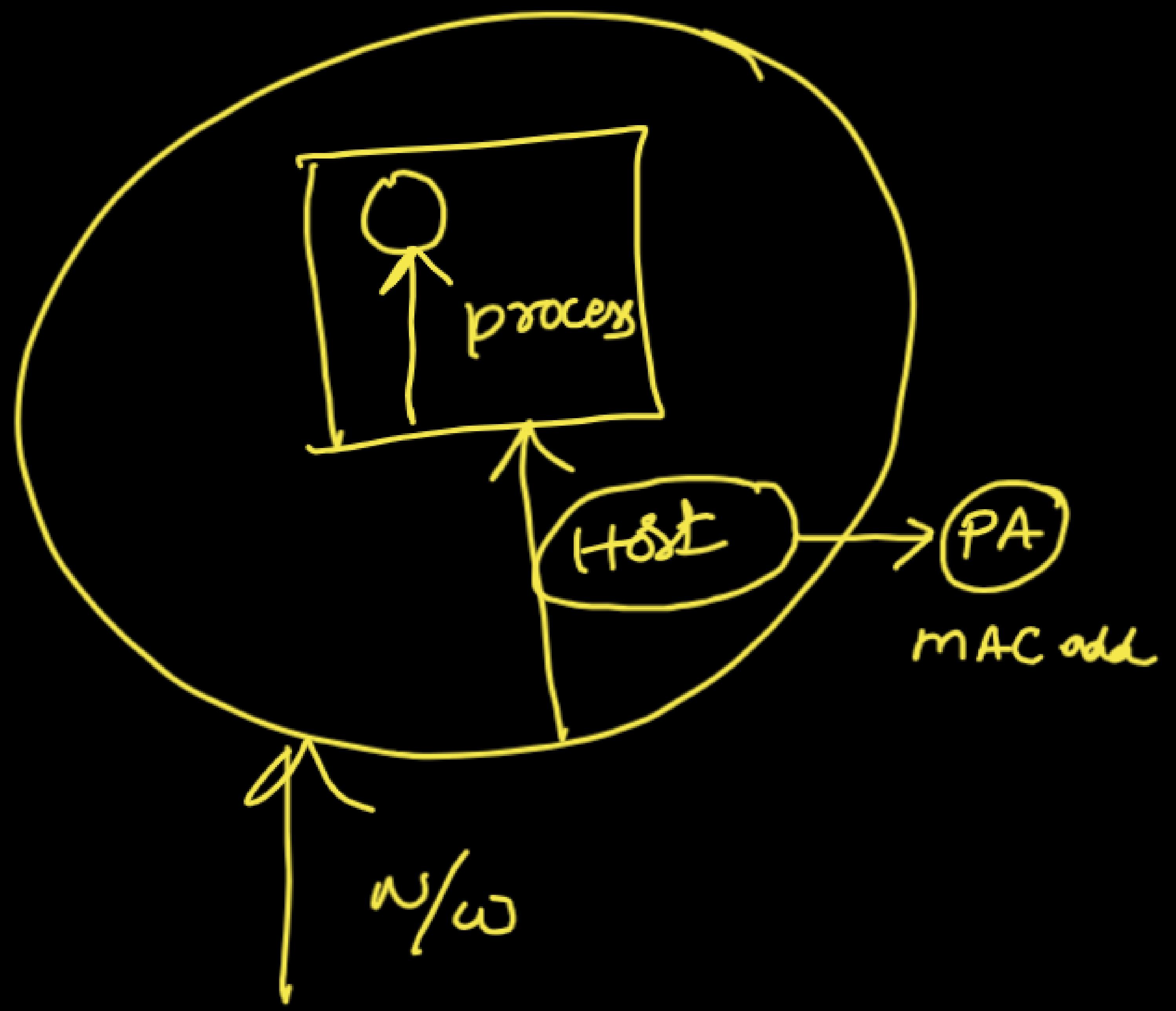
Topic wise we will have hours.

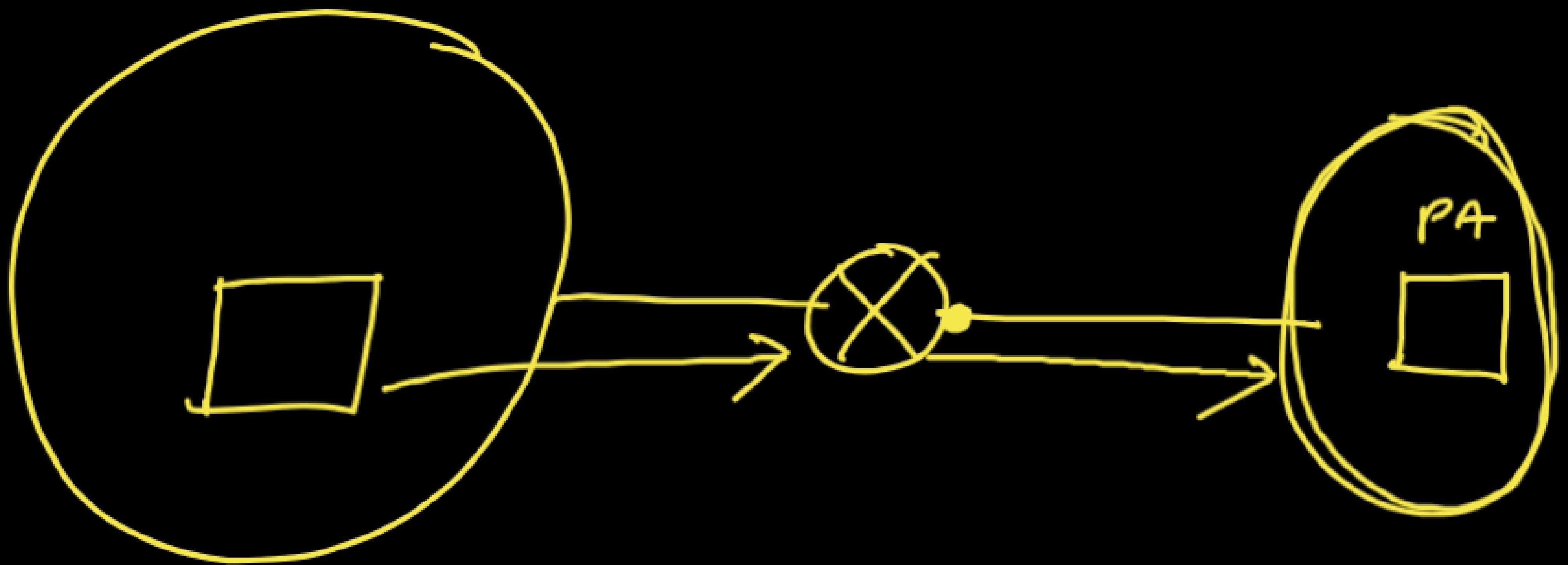
Total hours — Second



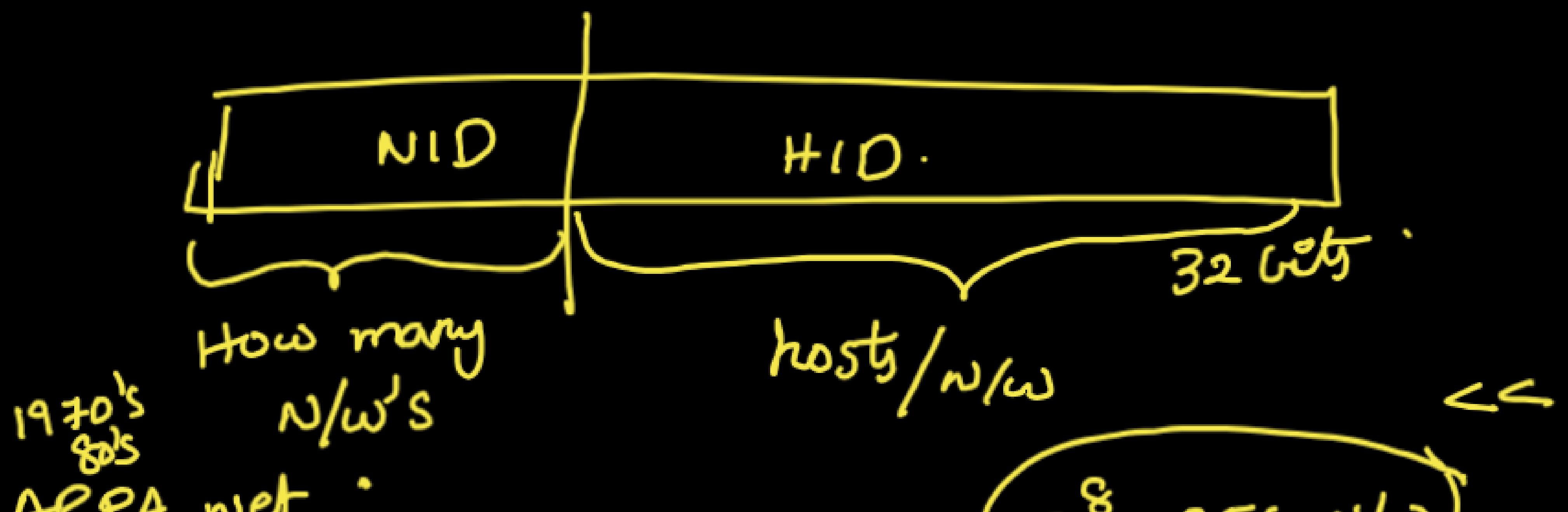


3 steps.

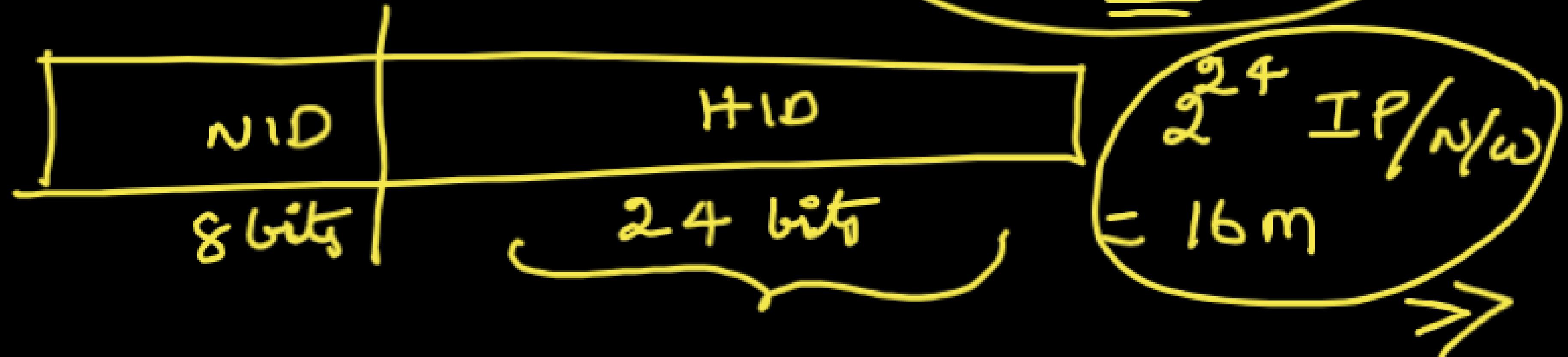




IP: IPv4 :- IP \rightarrow 32 bits



ARPA net:



2^{10} - K

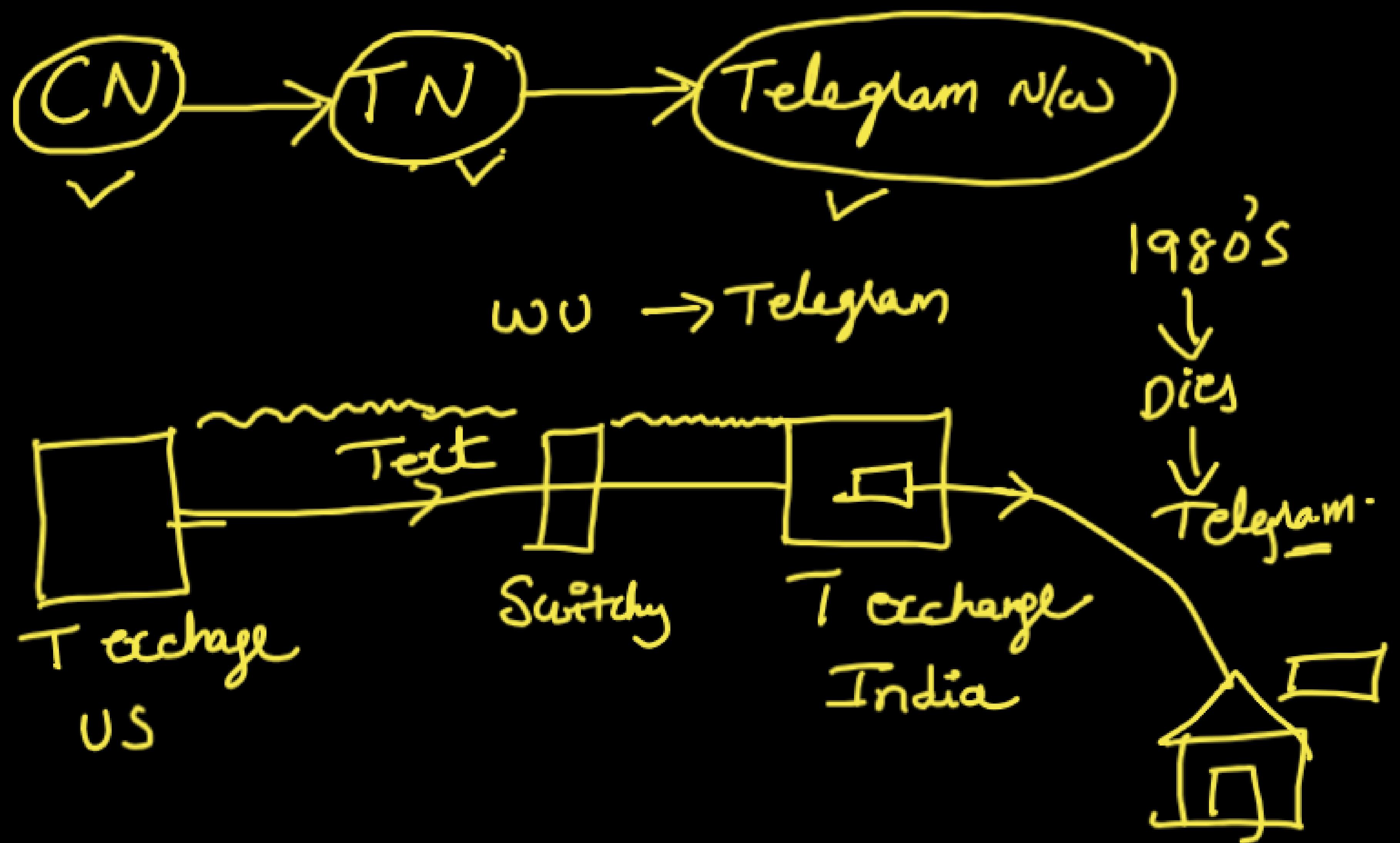
2^{20} - M

2^{30} - G

2^{40} - T

$2^1 \dots 2^{10}$

M GIT



WA → very big → Revenue

GB → Telephone

GB → WA (CEO) → demo

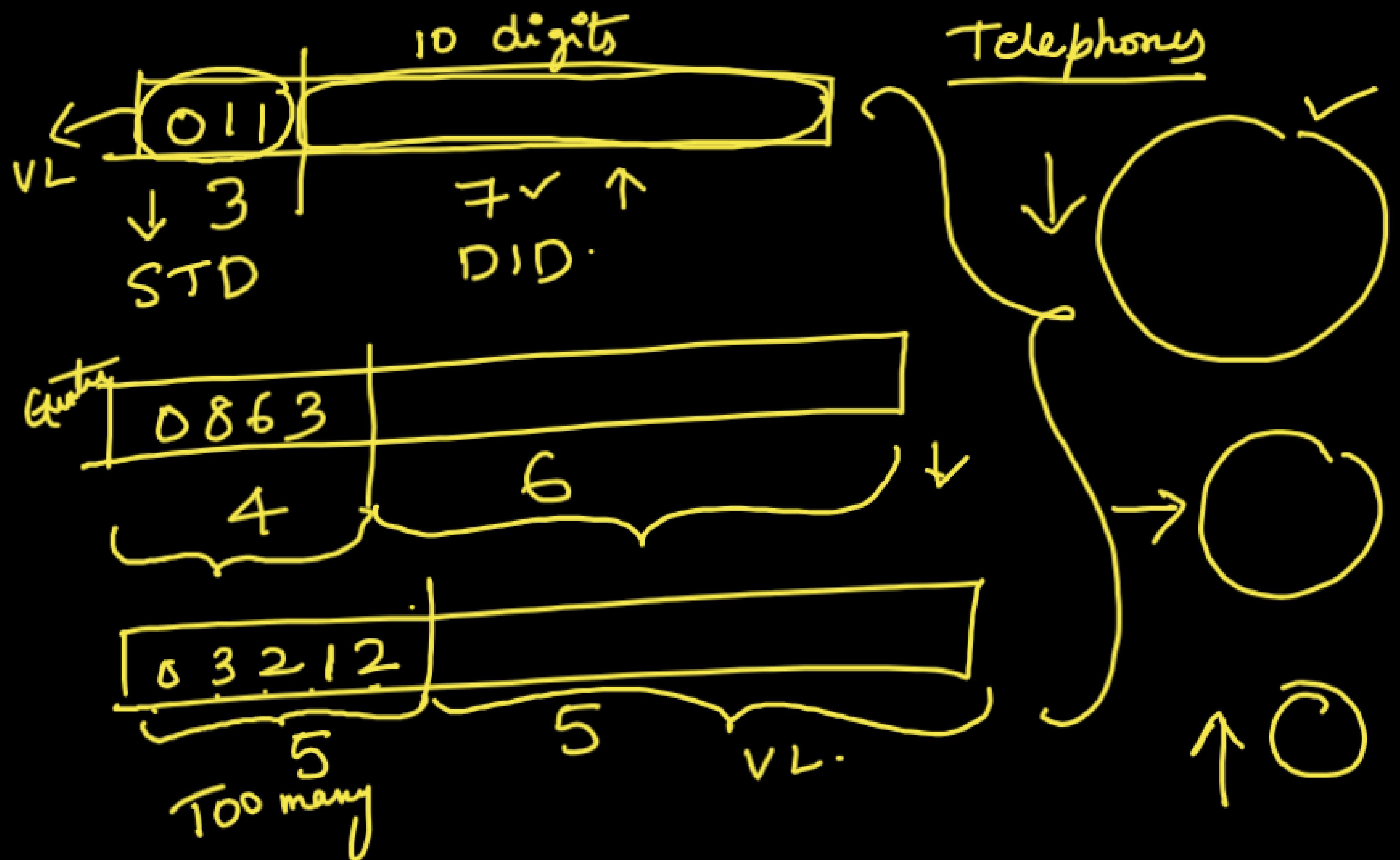


Range ↓

Range

City → State → Country → Con.





-
0
1

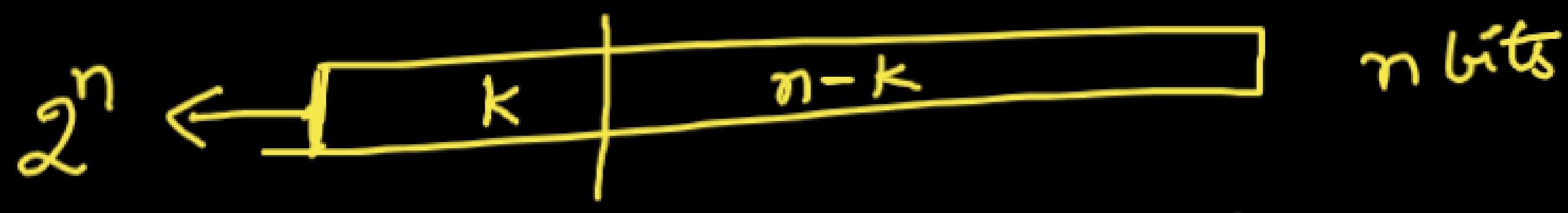
- -
0 0
0 1
1 0
1 1

$$\begin{array}{r} \boxed{-} \boxed{\square} - 2 = \frac{8}{2} \\ \hline \end{array}$$
$$\begin{array}{r} 0 0 0 \\ 0 0 1 \\ \hline 0 1 0 \\ 0 1 1 \\ \hline 1 0 0 \\ 1 0 1 \\ \hline 1 1 0 \\ 1 1 1 \\ \hline \end{array}$$

$1 \rightarrow 2^1 \checkmark$

$2 - 2^2$

$$\frac{8}{2^2} = 2^1$$

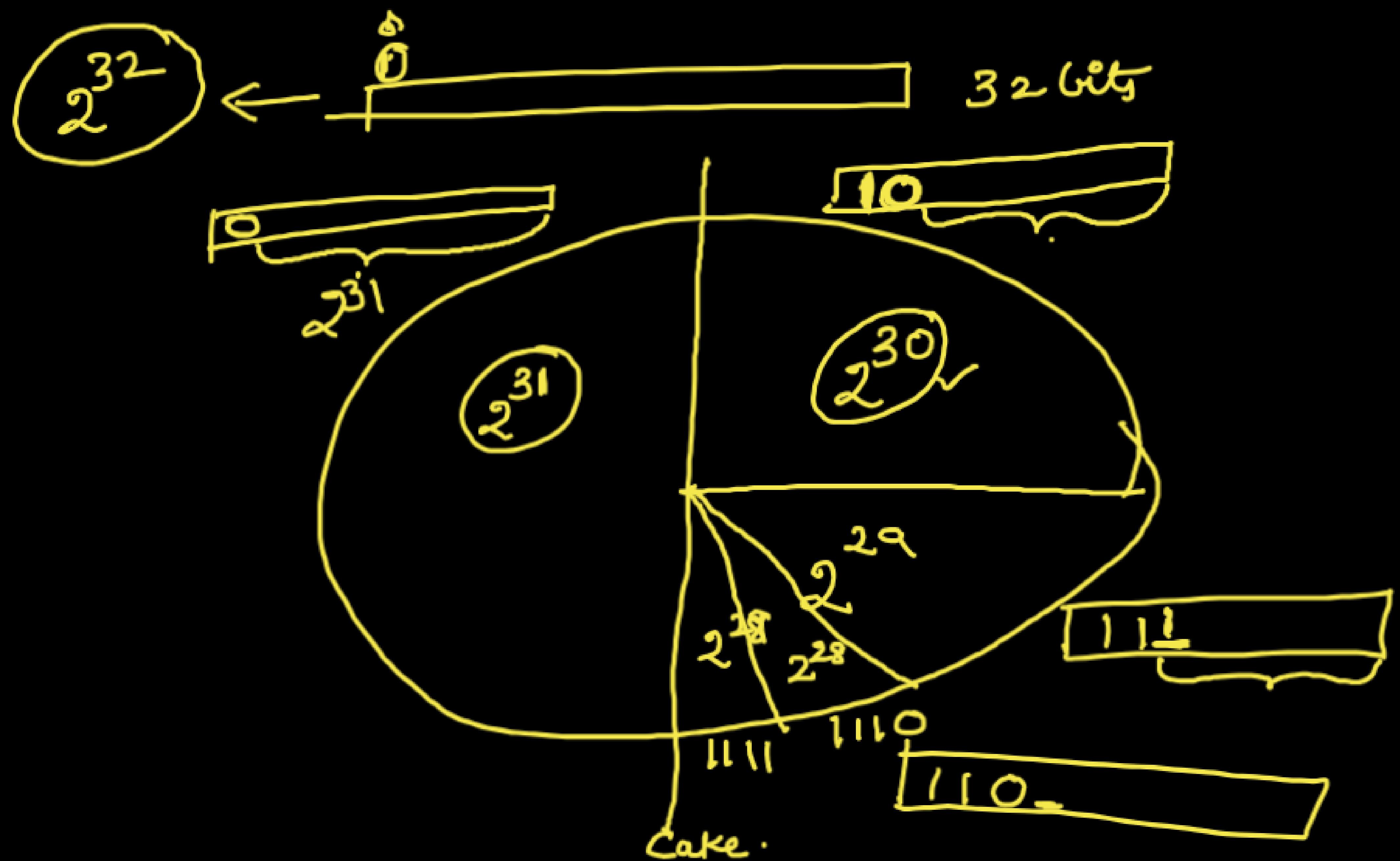


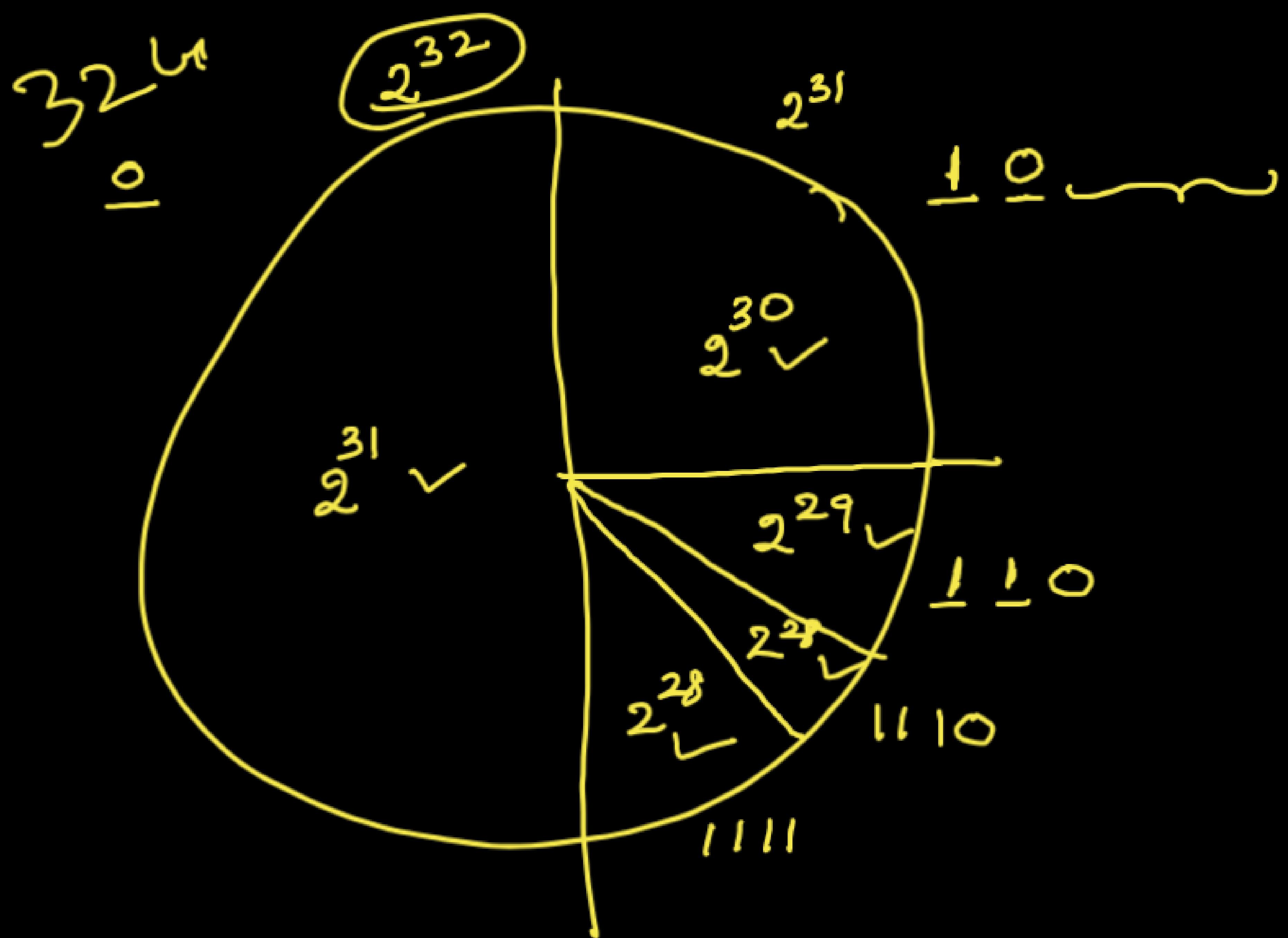
parts $\rightarrow 2^k - 2^{n-k}$

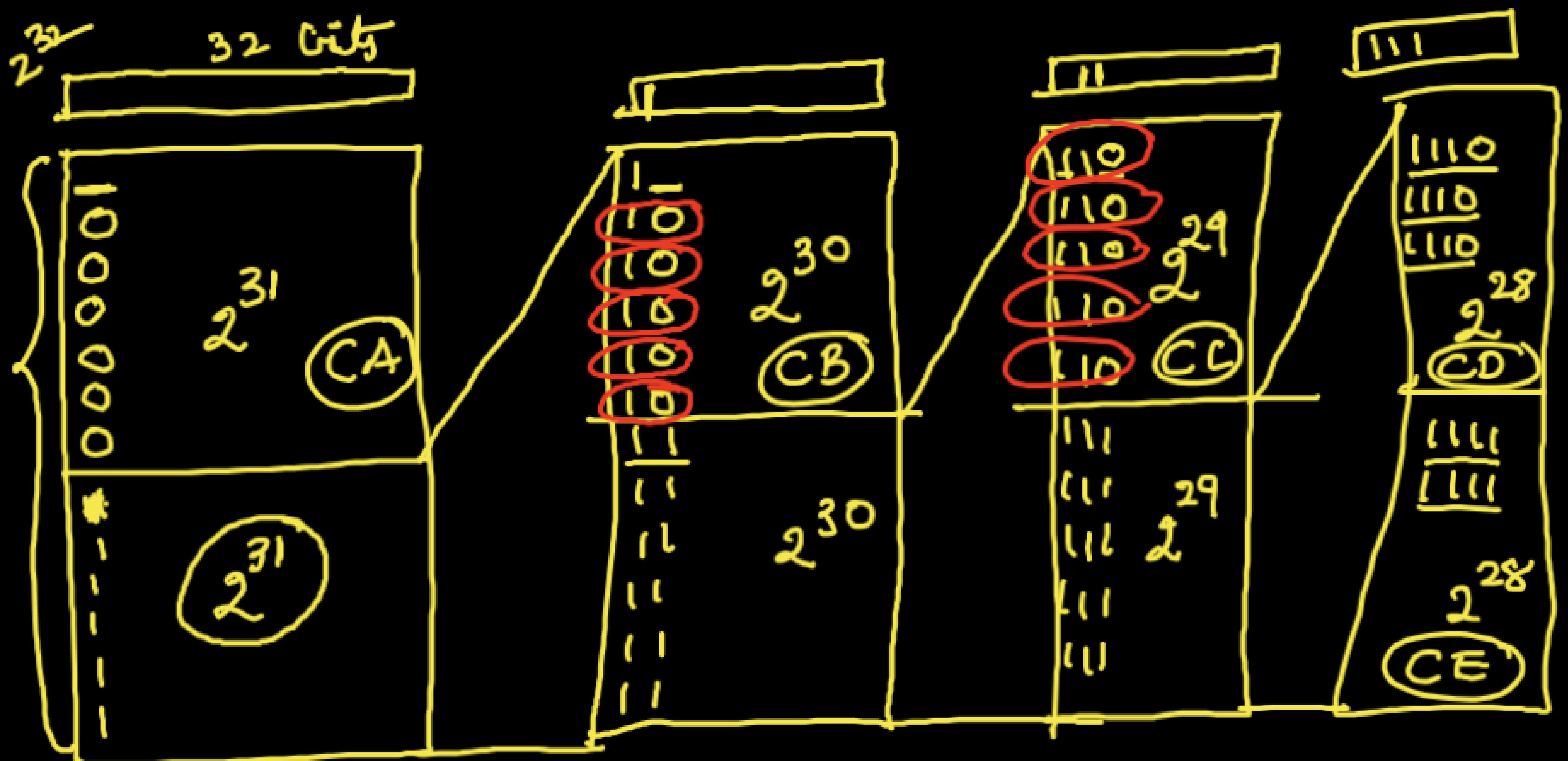
CN $\rightarrow N/w$ Hosts & IP

OS \rightarrow Pages Page size

CO \rightarrow Blocks Block size





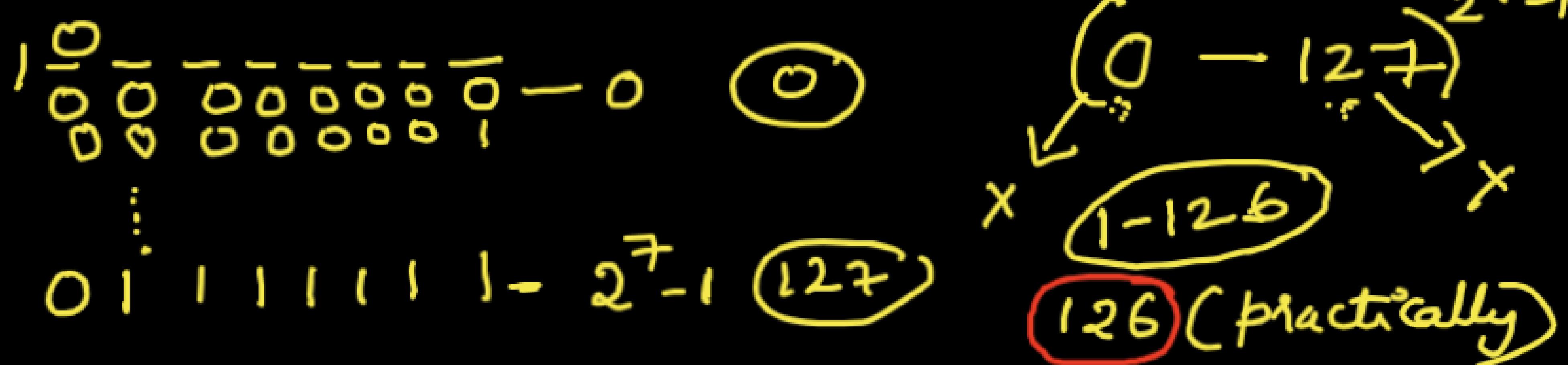


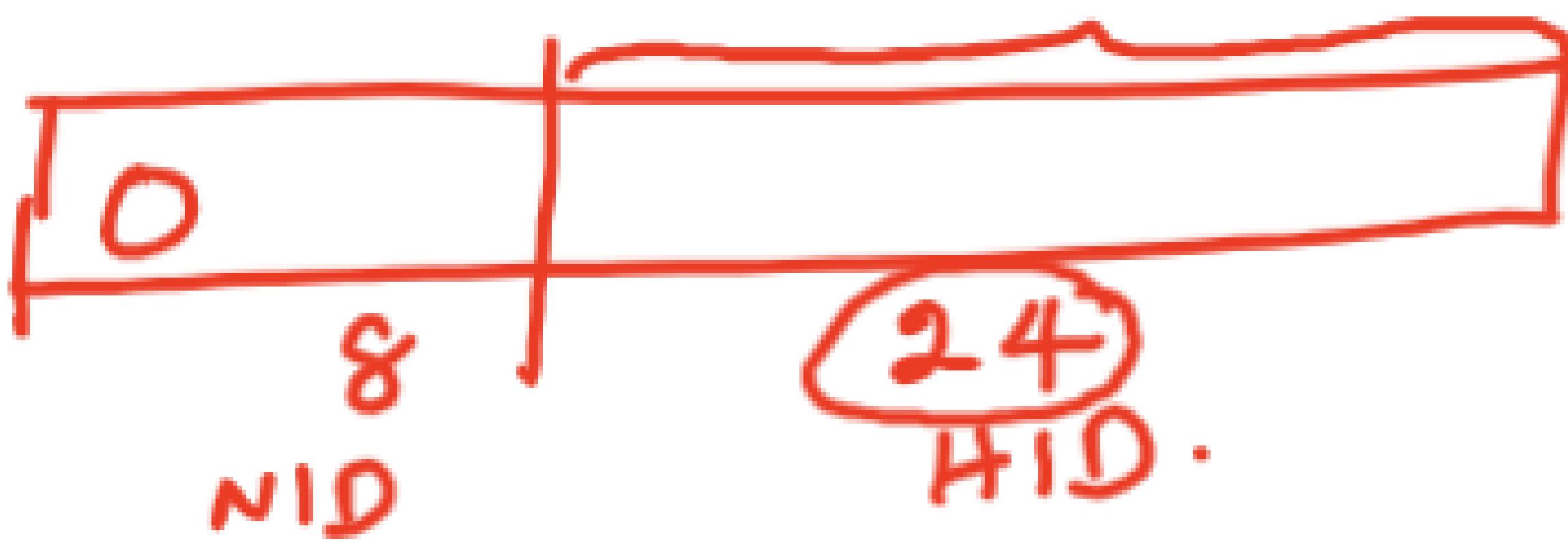
Class A

How many IPs are present in CA = 2^{31}



networks in CA $\rightarrow 2^7 = 128$ (theoretical)





126 n/w

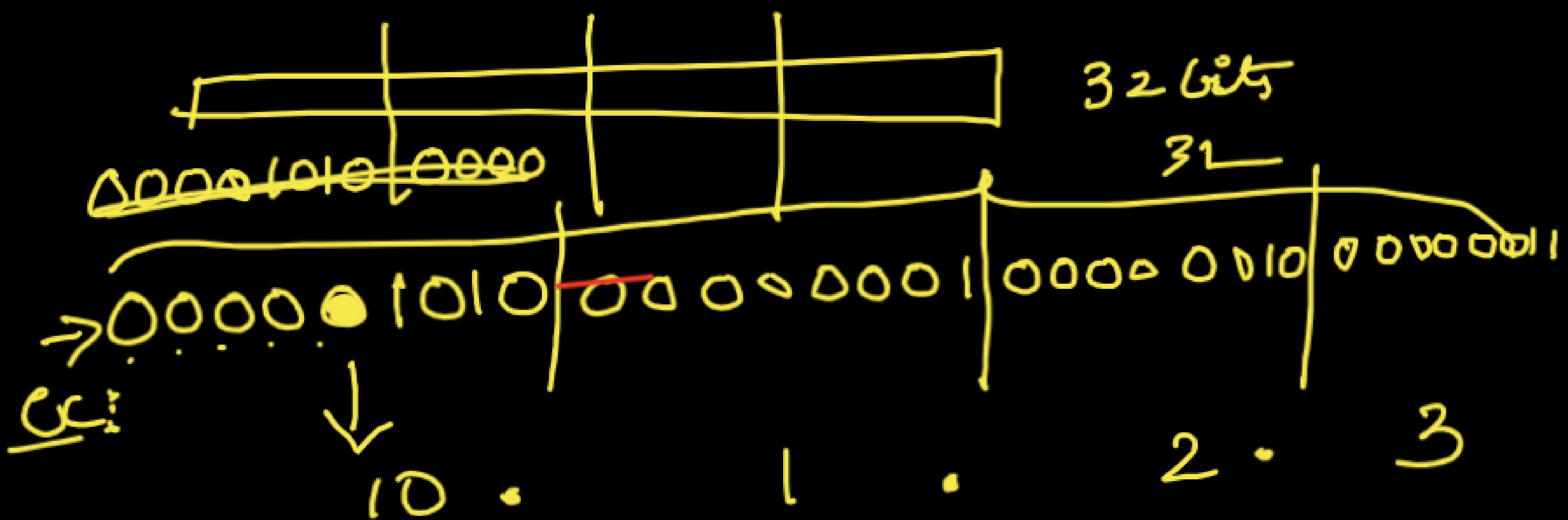
IP add /n/w

$$-? \quad 2^{24} = 16 \text{ million}$$

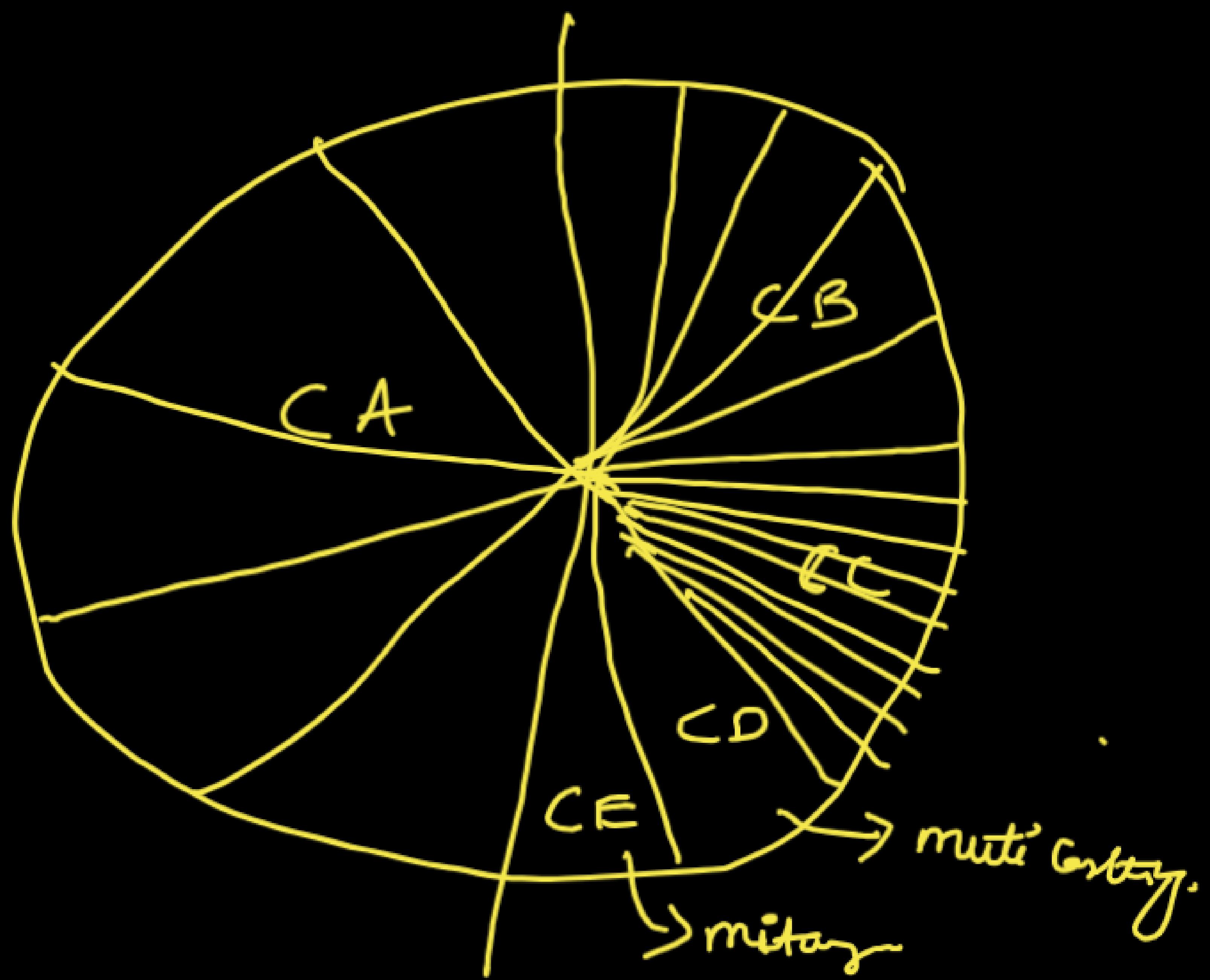
Hosts /n/w -?

$$2^{24} - 2^1$$

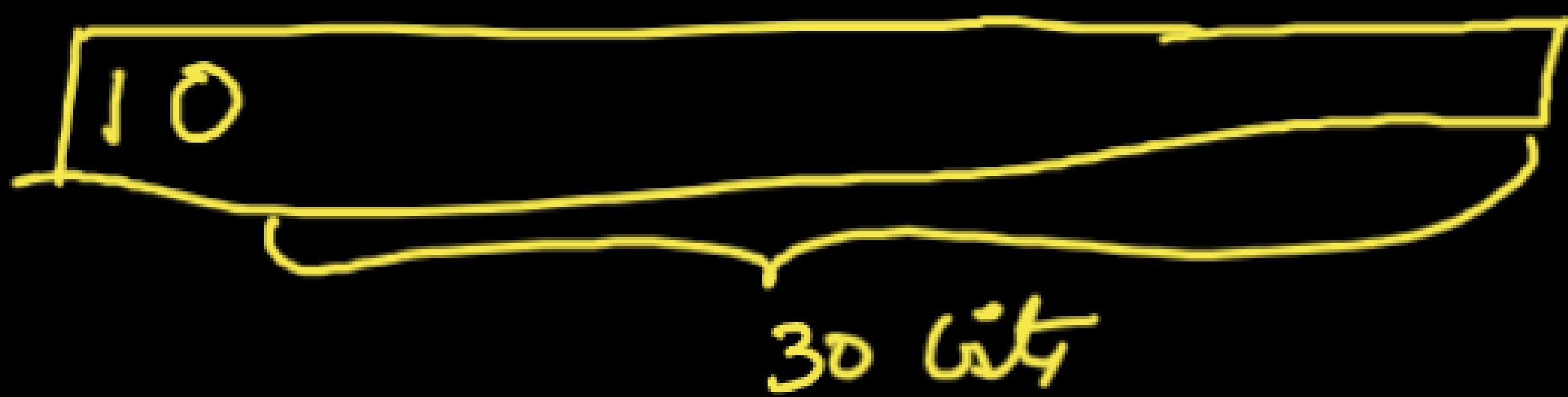
32 bit IP add is represented as dotted decimal number.



Convention



CB



How many IP addresses are in CB = 2^{30}



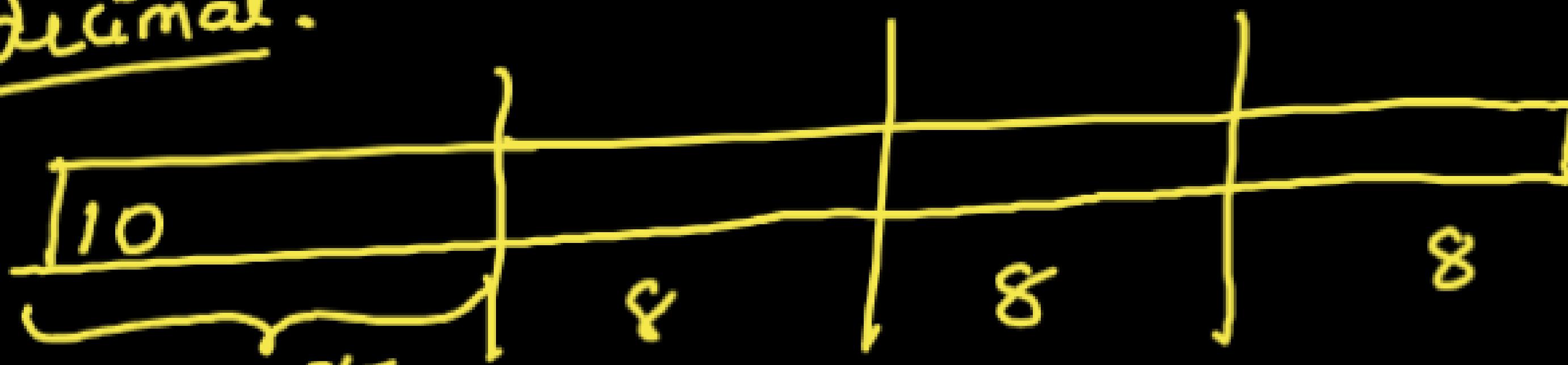
N/w are in CB = 2^{14}

IP add in N/w in CB = 2^{16}

$$\begin{aligned} CA &= 126 \\ \text{Size} &= 2^{24} = 4M \\ &\quad (64K) \end{aligned}$$

Hosts can be in a n/w in $CA = \underline{2}^{16} - \underline{2} =$

Dotted decimal:

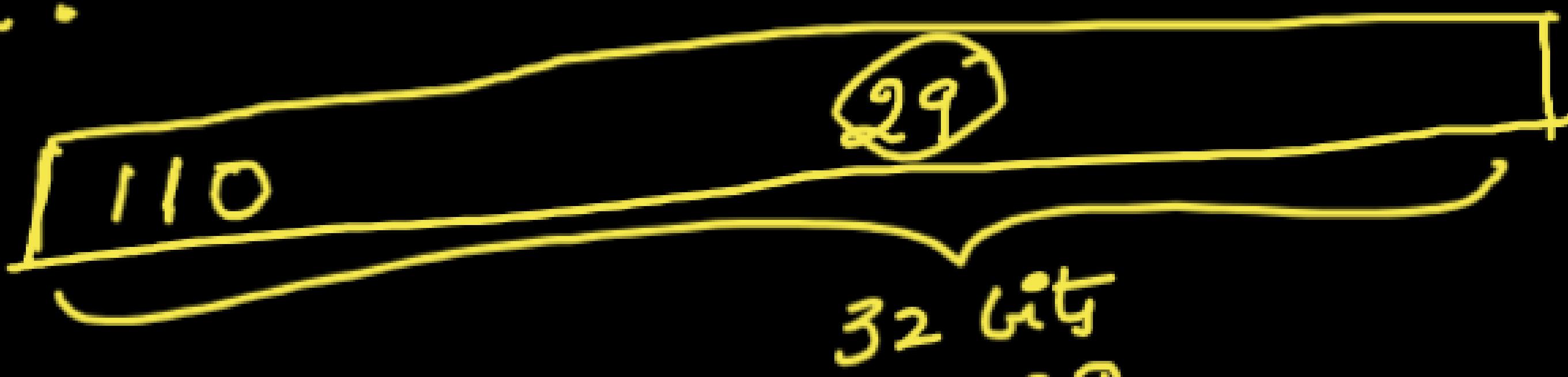


$$\begin{array}{ccccccccc} 2^7 & 2^6 & 2^5 & 2^4 & 2^3 & 2^2 & 2^1 & 2^0 \\ \hline 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \hline & 128 & & & & & & \end{array}$$

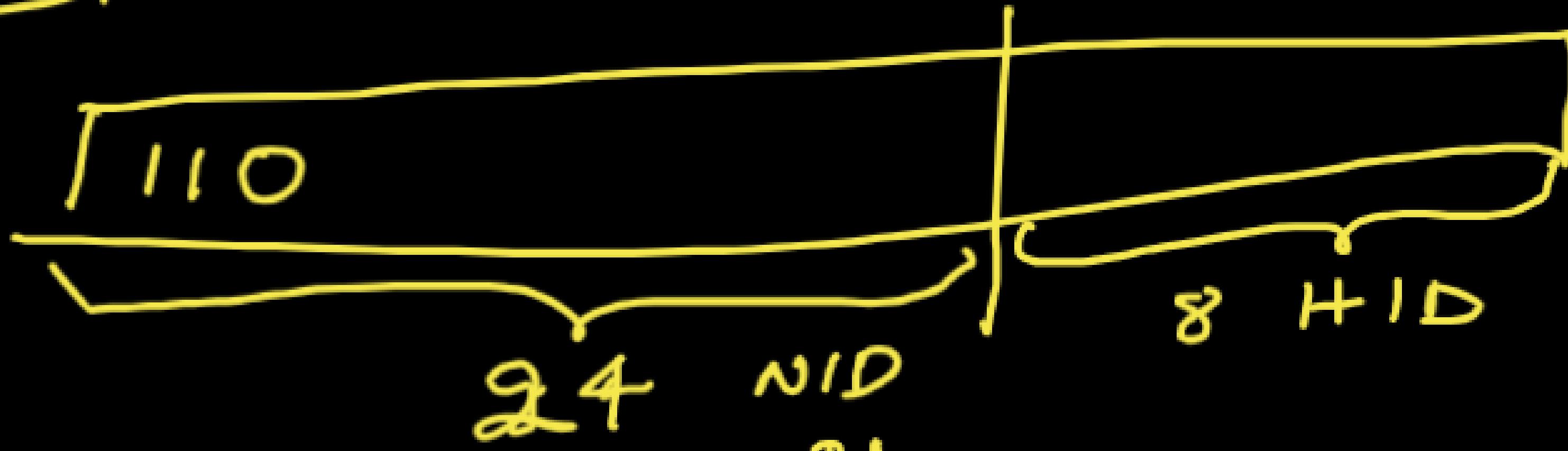
I octet range
for CB = $(128 - 19)$

$$\begin{array}{ccccccccc} 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 \\ \hline 128 & & & & & & & \end{array} - 19$$

Class C:



IP add in CC = 2^{29}

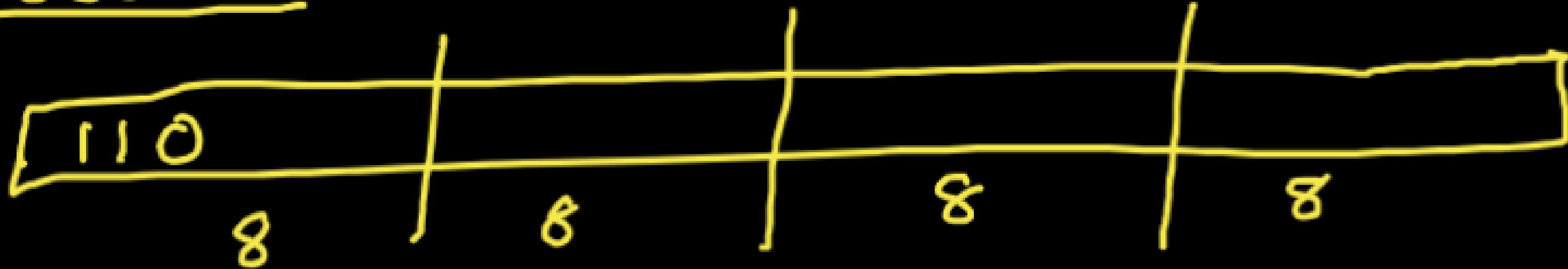


N/W in CC = 2^{21}

IP in a N/W in CC = $2^8 = 256$

Hosts in a N/W in CC = $2^8 - 2$

Dotted decimal:



First git:

$$1101111 \rightarrow 223$$

$CA \rightarrow (1-126)$

$CB \rightarrow (128-191)$

$CC \rightarrow (192-223)$

$10 \cdot 1 \cdot 2 \cdot 3$
[A]

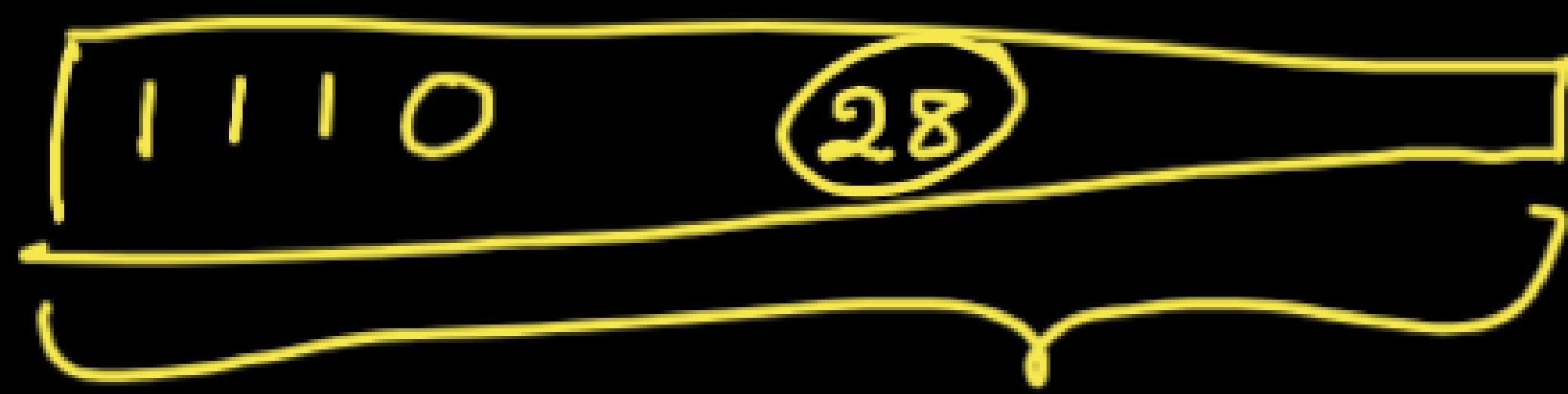
$180 \cdot 1 \cdot 4 \cdot 5$
[B]

Size of a row in CA = 2^{24}

Size of a row in CB = 2^{16}

Size of a row in CC = 2^8

Class D:



IP add in CD = 2^{32} 2^{28}

No n/w and HD division

Dotted decimal:

1110 | | |
8 8 8 8

$$\begin{array}{r} 2^7 2^6 2^5 2^4 2^3 2^2 2^1 2^0 \\ 1 \ 1 \ 1 \ 0 - - - - \\ \hline 0 \ 0 \ 0 \ 0 - 224 \end{array}$$

0 0 0 1
0 0 1 0

224 - 239

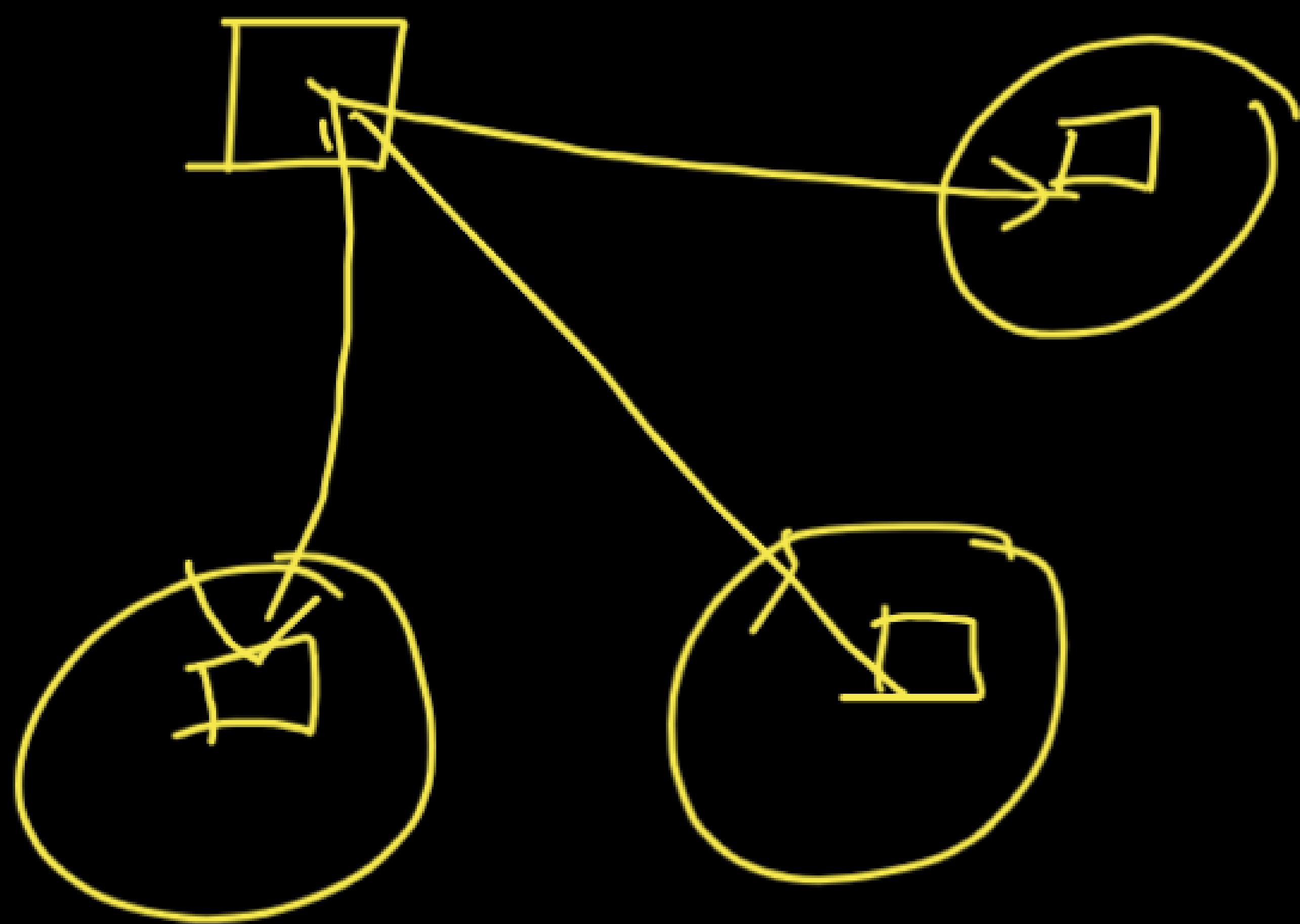
⋮

1 1 1 1 - 239

2^4 - 1

224 + 15

~~CD + multi casting~~ X



class E:



IP odd $\rightarrow 2^{28} \rightarrow$ Reserved

dotted decimal: [1111] | | | | 8 8 8 8

1111 - 0000 - 240

⋮
⋮

1111 - 255

$$\begin{array}{l} A - 1-126 \quad 0 \\ B - 128 - 191 \quad 10 \\ C - 192 - 223 \quad 110 \\ D - 224 - 239 \quad 115 \\ E - 240 - 255 \quad 111 \end{array} \quad \left. \begin{array}{l} \\ \\ \\ \\ \end{array} \right\} 200.1.2.3 \quad \cong$$

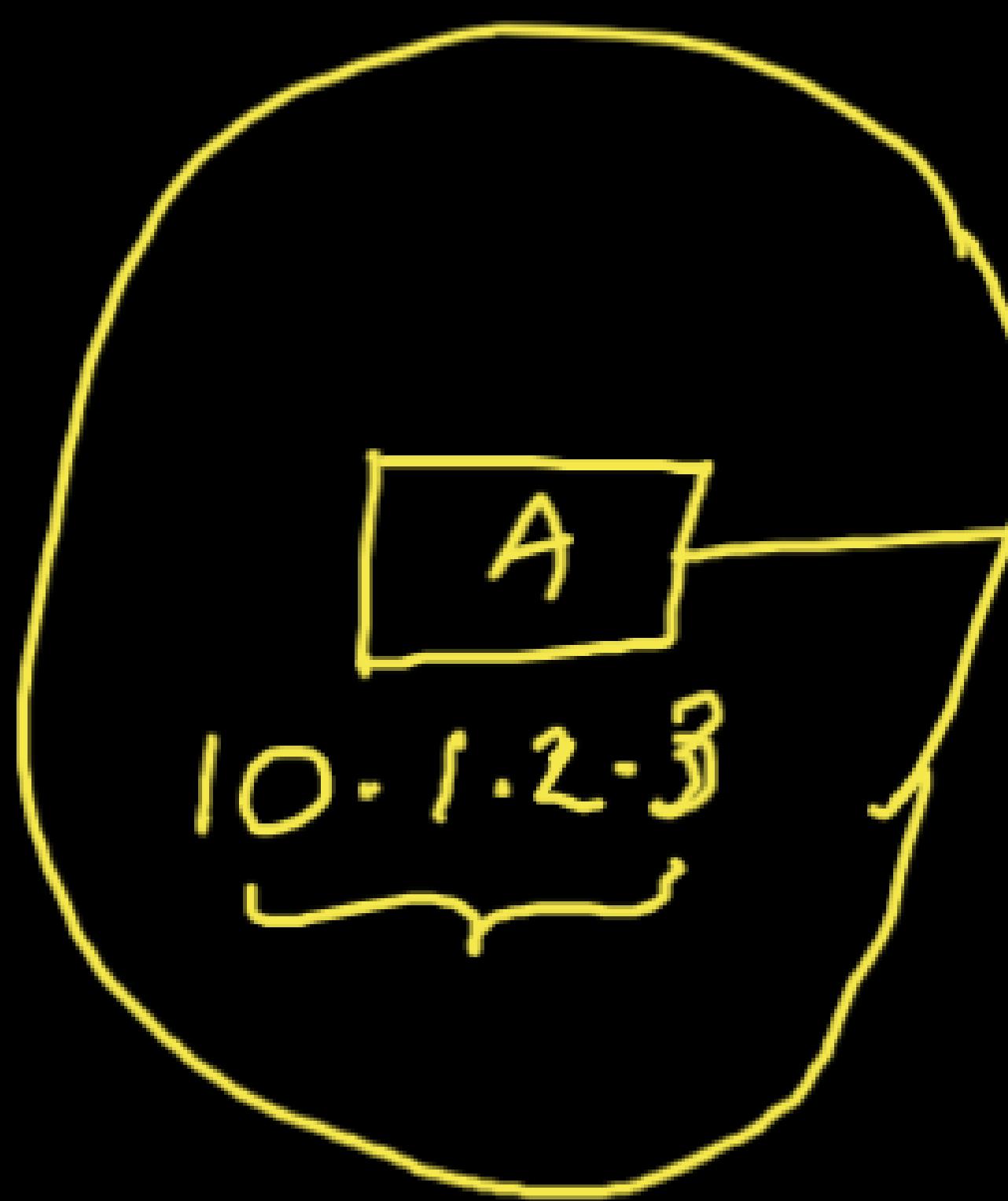
(-2)

(CD)

5 min

unicasting:

10.0.0.0



| → |
unicasting

200.1.2.0

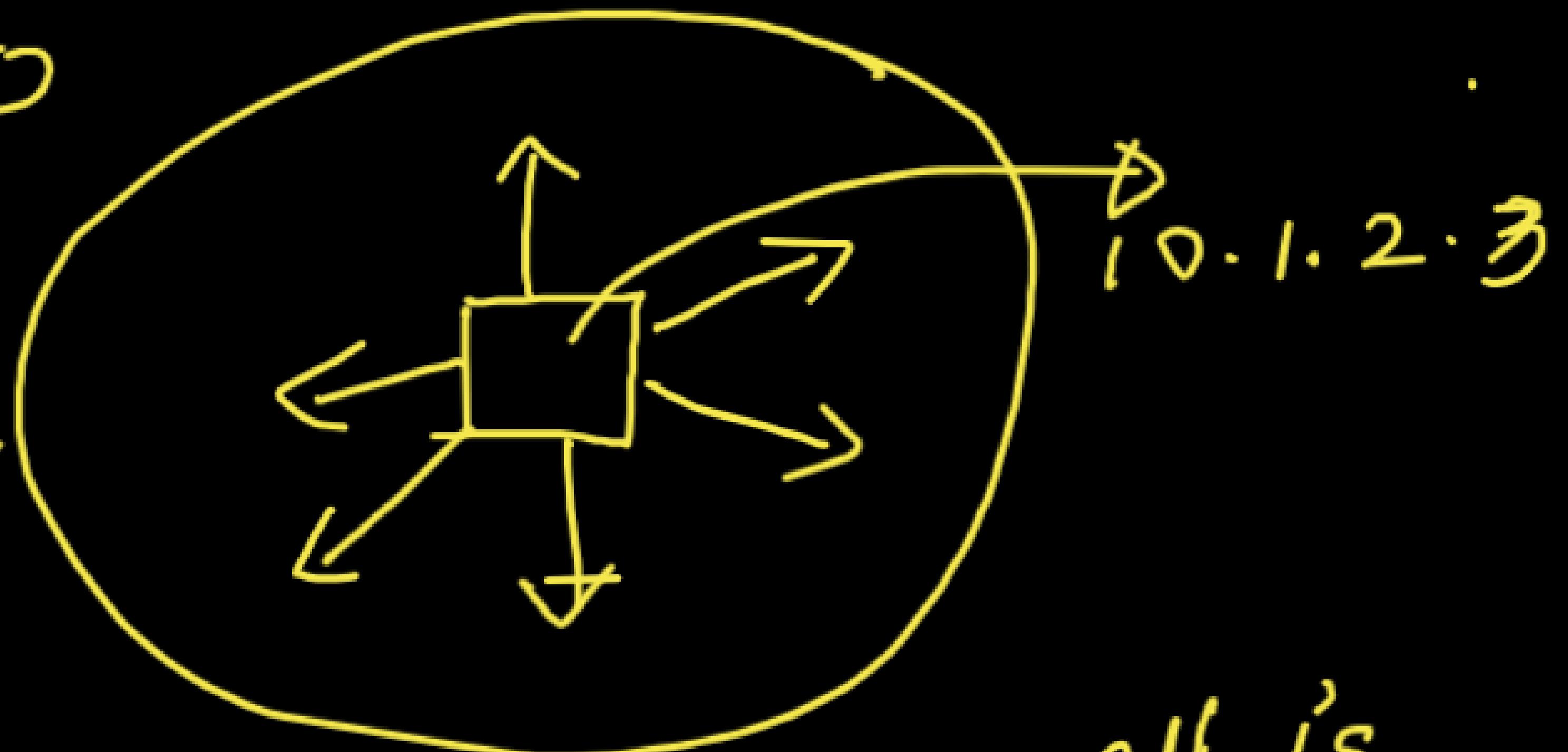
m
m SA DA

DA

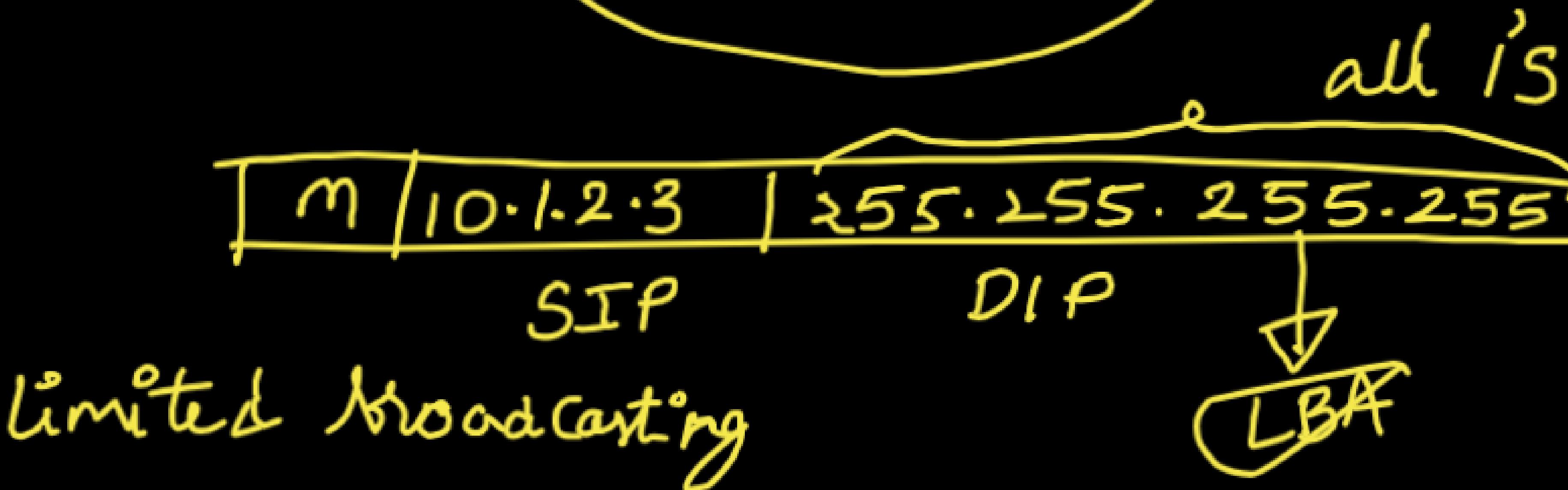
SA
[m] 10.1.2.3 [200.1.2.1]

10.0.0.0

To everyone
in the same
rt/w



10.1.2.3



limited broadcasting

$$10 \cdot 1 \cdot 2 \cdot 3 \rightarrow \frac{10}{NID} \cdot \frac{1 \cdot 2 \cdot 3}{HID} \rightarrow \text{all } \delta's \text{ HID}$$

\downarrow
NID of N/W

Rep N/W

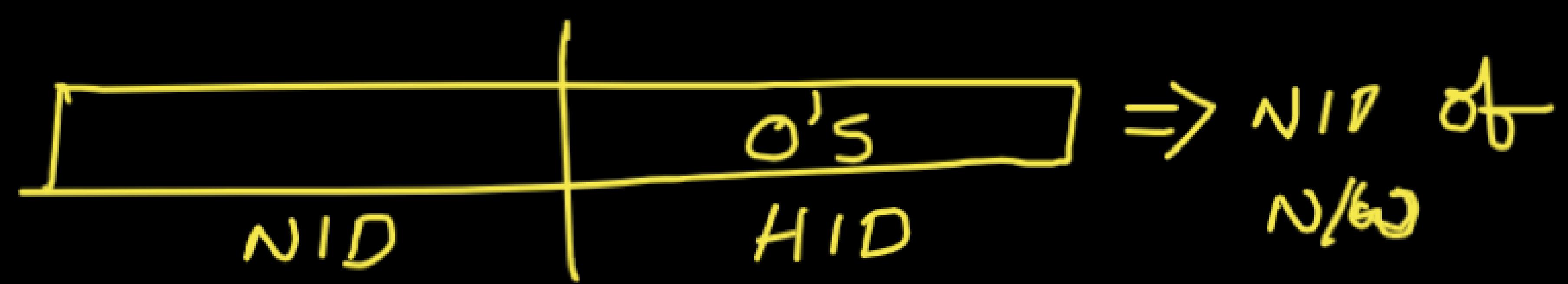
$$150 \cdot 1 \cdot 2 \cdot 3 \cdot \frac{150 \cdot 1 \cdot 2 \cdot 3}{NID \cdot HID} \quad \text{Special}$$

\times host

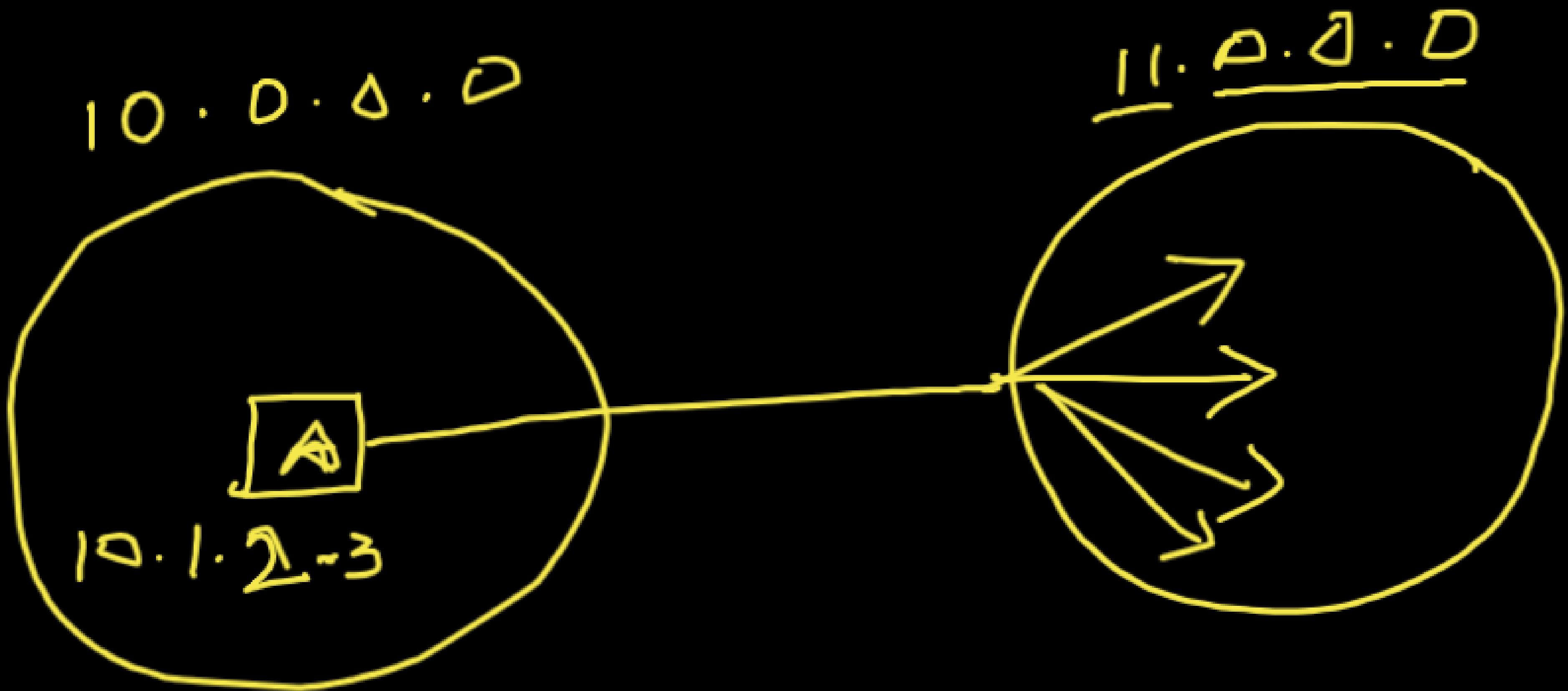
NID of N/W - $(150 \cdot 1 \cdot 0 \cdot 0)$

$$\frac{200 \cdot 1 \cdot 2 \cdot 3}{NID \cdot HID} \Rightarrow \text{NID of N/W} \Rightarrow (200 \cdot 1 \cdot 2 \cdot 0)$$

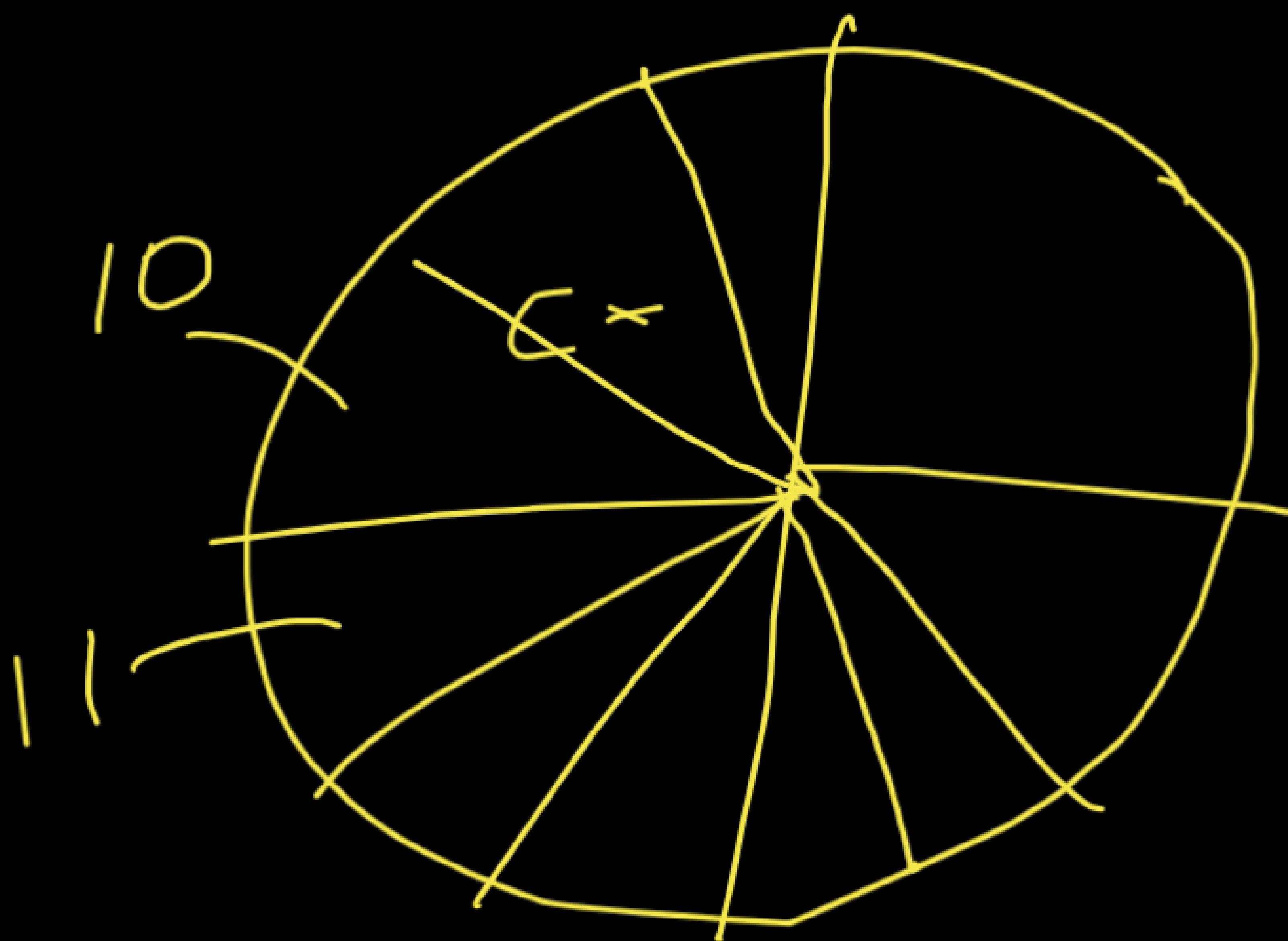
$-2 \Rightarrow$ all 0's



Director BC



$$\frac{m}{S_A} = \sqrt{\frac{11 \cdot 255 \cdot 255 \cdot 255}{DBA}}$$



1. 2. 3. 4

NID : 1. 0. 0. 0 -

DBA : 1. 255. 255. 255

130 · 1 · 2 · 3

NID: 130 · 1 · 5 · 0

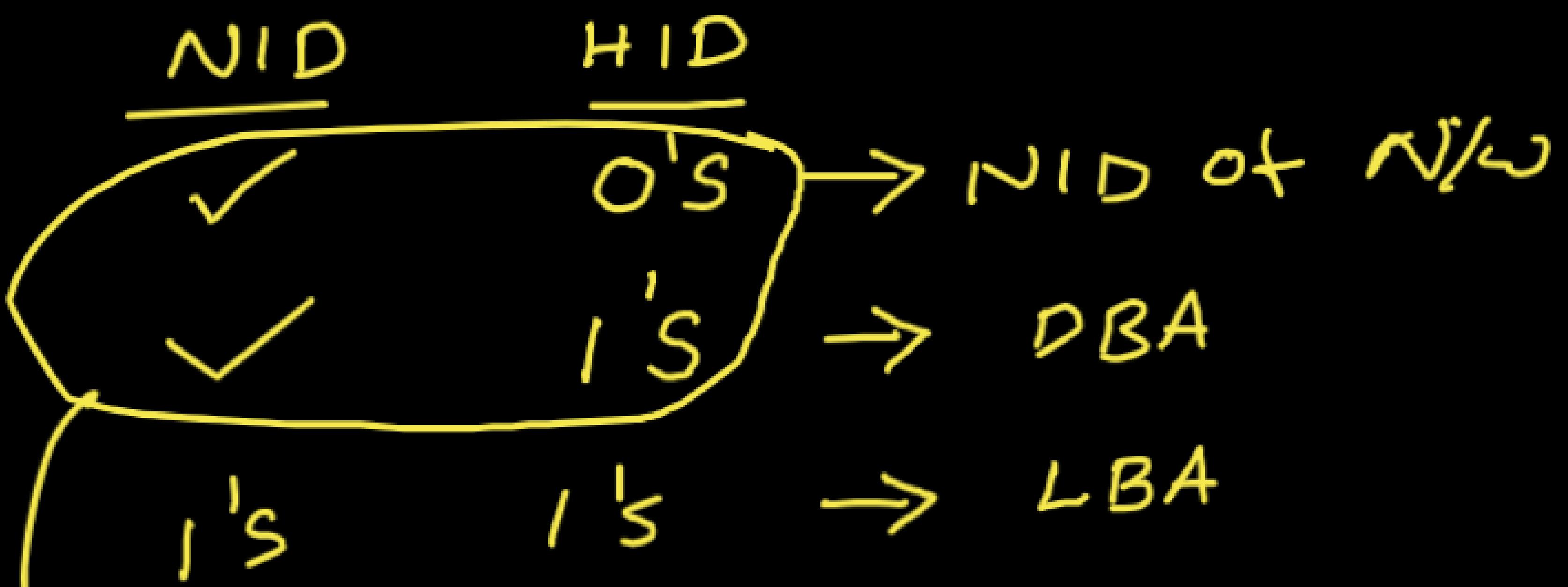
DBA: 130 · 1 · 255 · 255

200·1·10·100

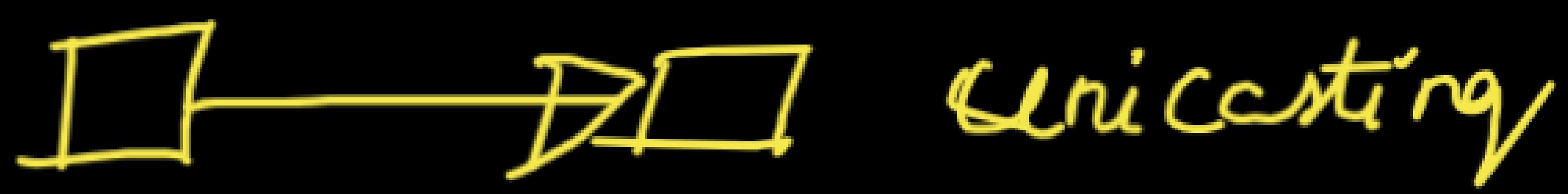
NID: 200·1·10·0

DBA: 200·1·10·255

250·15·1·10  X N/W
X H
X B

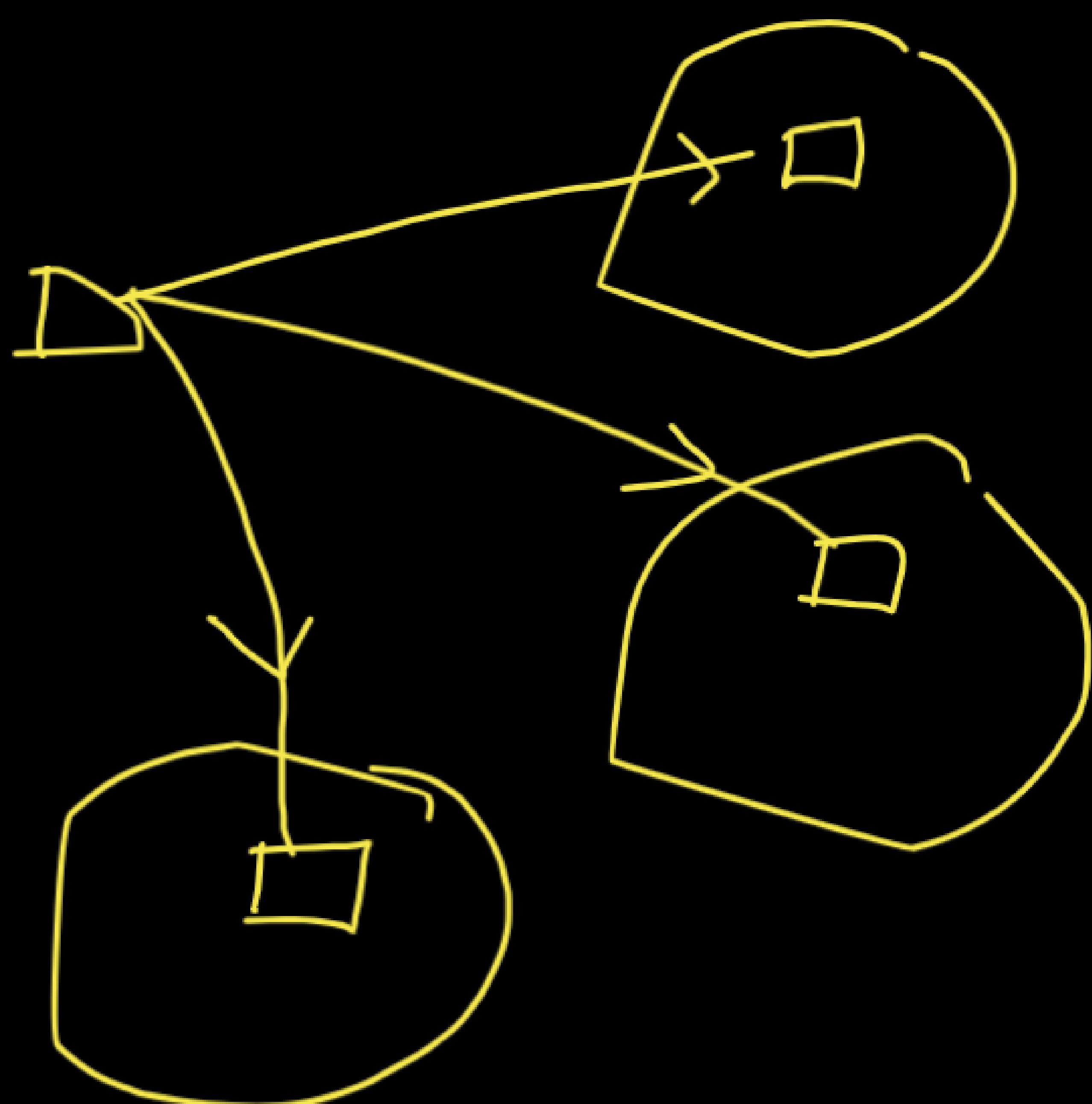


Cannot be given to a host
-2 ⇒ no of hosts



Limited B L





sulnetting

Break 5 min

