

Min coins to make the change?

Coins =  $\begin{bmatrix} 1\$ \\ 7\$ \\ 10\$ \end{bmatrix}$

~~15~~ 5\$

↑  
2

1 → Dead 1  
 1 → Alive 0

0 0 0 0 1 0 0 1 ... 1

⇒ Decimal

2 2 ... 2  
P1 P2 ... P5 P8 P9 P10 ✓

$= 2^{10} = 1024$  unique States.

1-  
 1  
2  
3

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	1	0
0	0	0	0	0	0	<u>1</u>	<u>1</u>
0	0	0	0	0	1	0	0
0	0	0	0	1	0	0	<u>1</u>

one month

1  
1000 — — 6010100 — —

## Binary Search

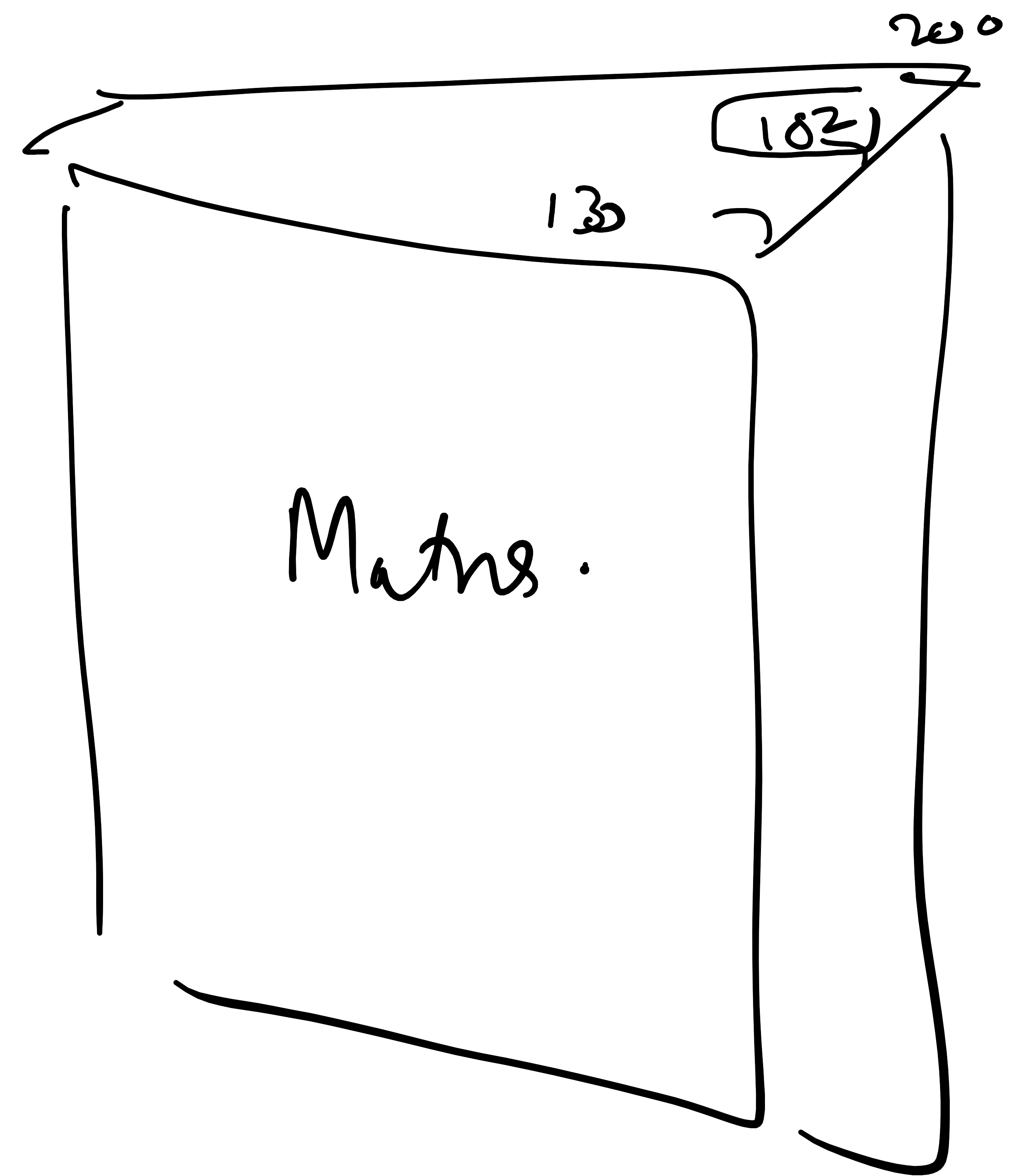
a = [1, 3, 2, 5, 7, 6]

0 1 2 3 4 5

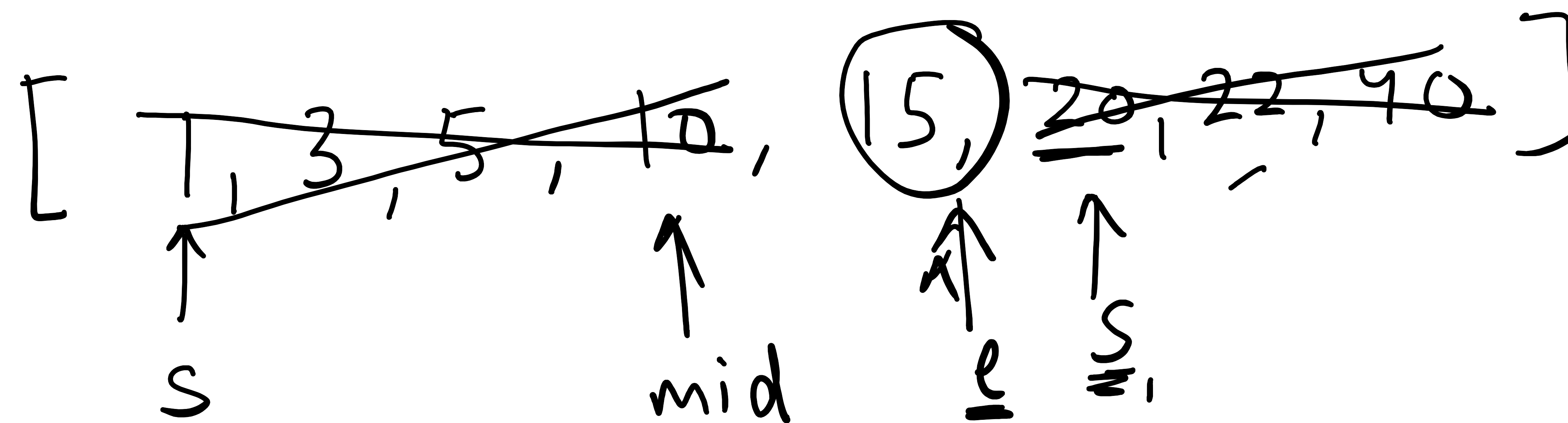
↑ ↑ ↑ ↑ ↑

find 7

linear search



16



$$\text{mid} = \frac{s + e}{2}$$

while(s <= e)

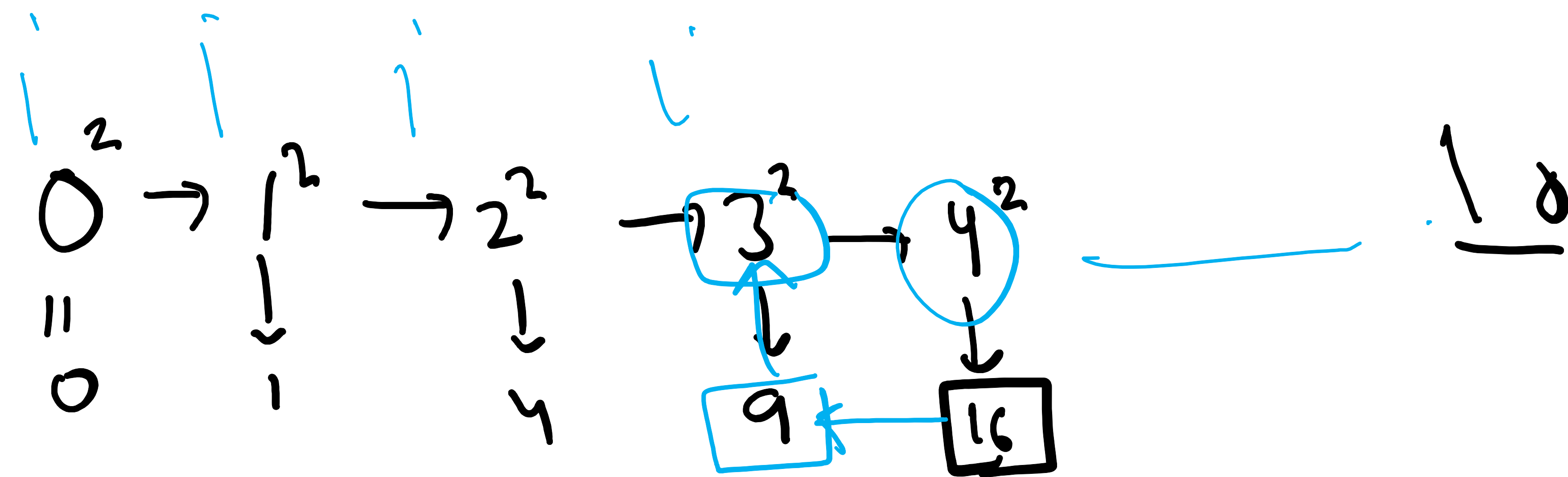
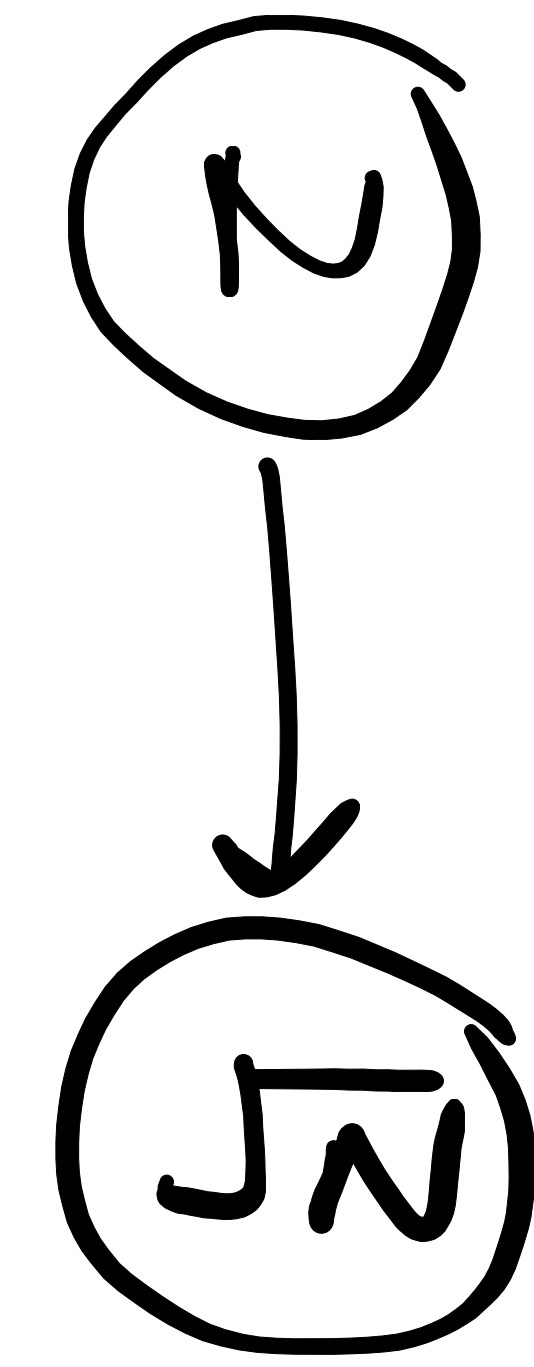
# Linear Search : Square Root

3.

↑  
output

10

↑  
input



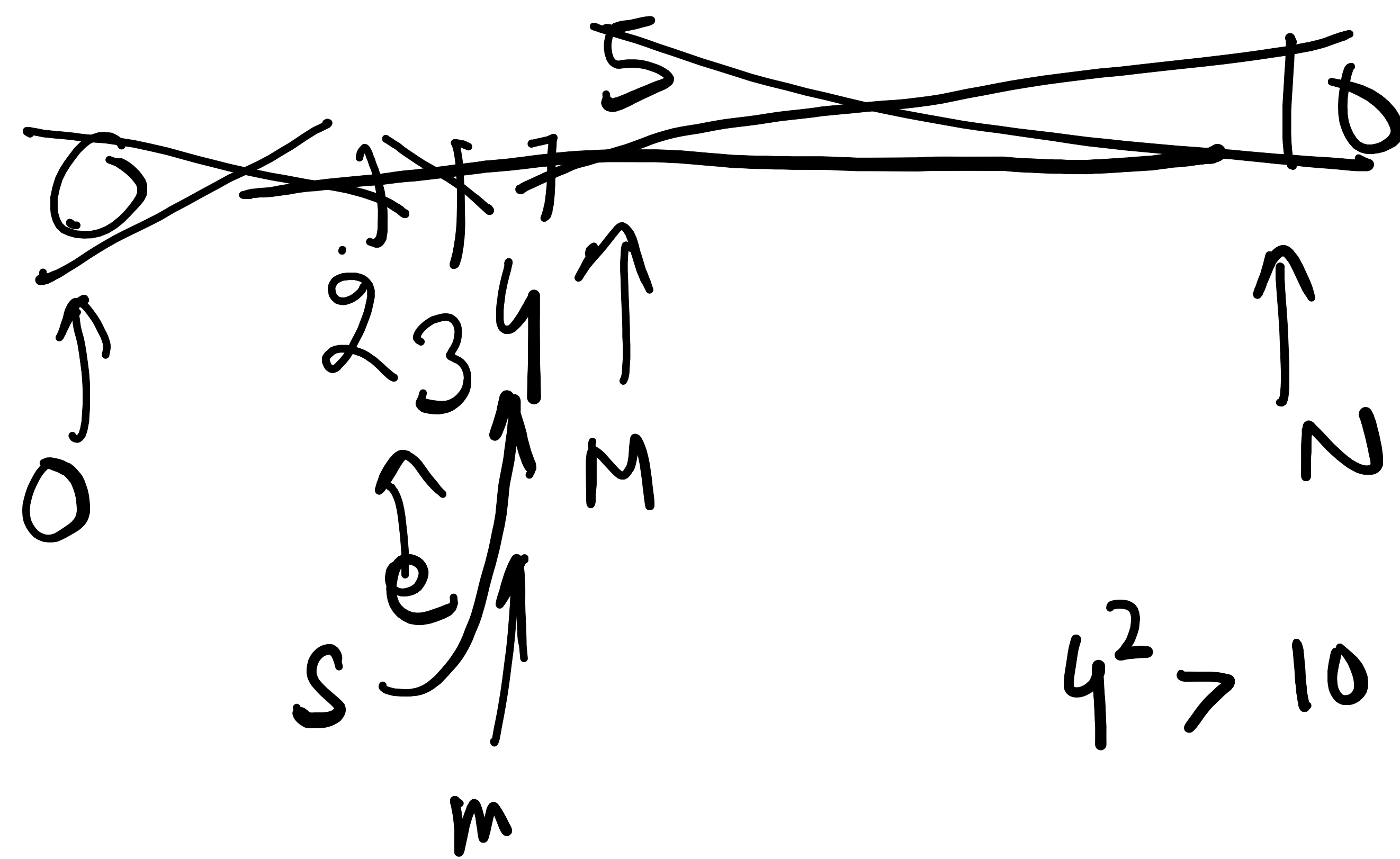
$$2^2$$

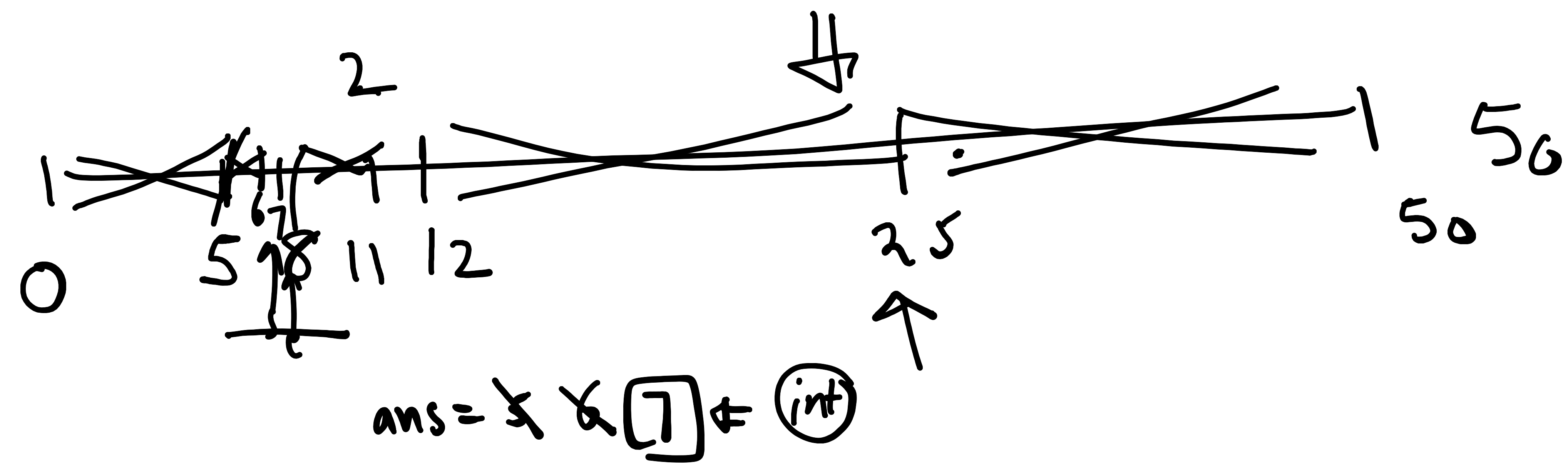
$$5^2$$

$$2^2 \leq 10$$

$$\sqrt{10}$$

$$\text{ans} = \boxed{3}$$





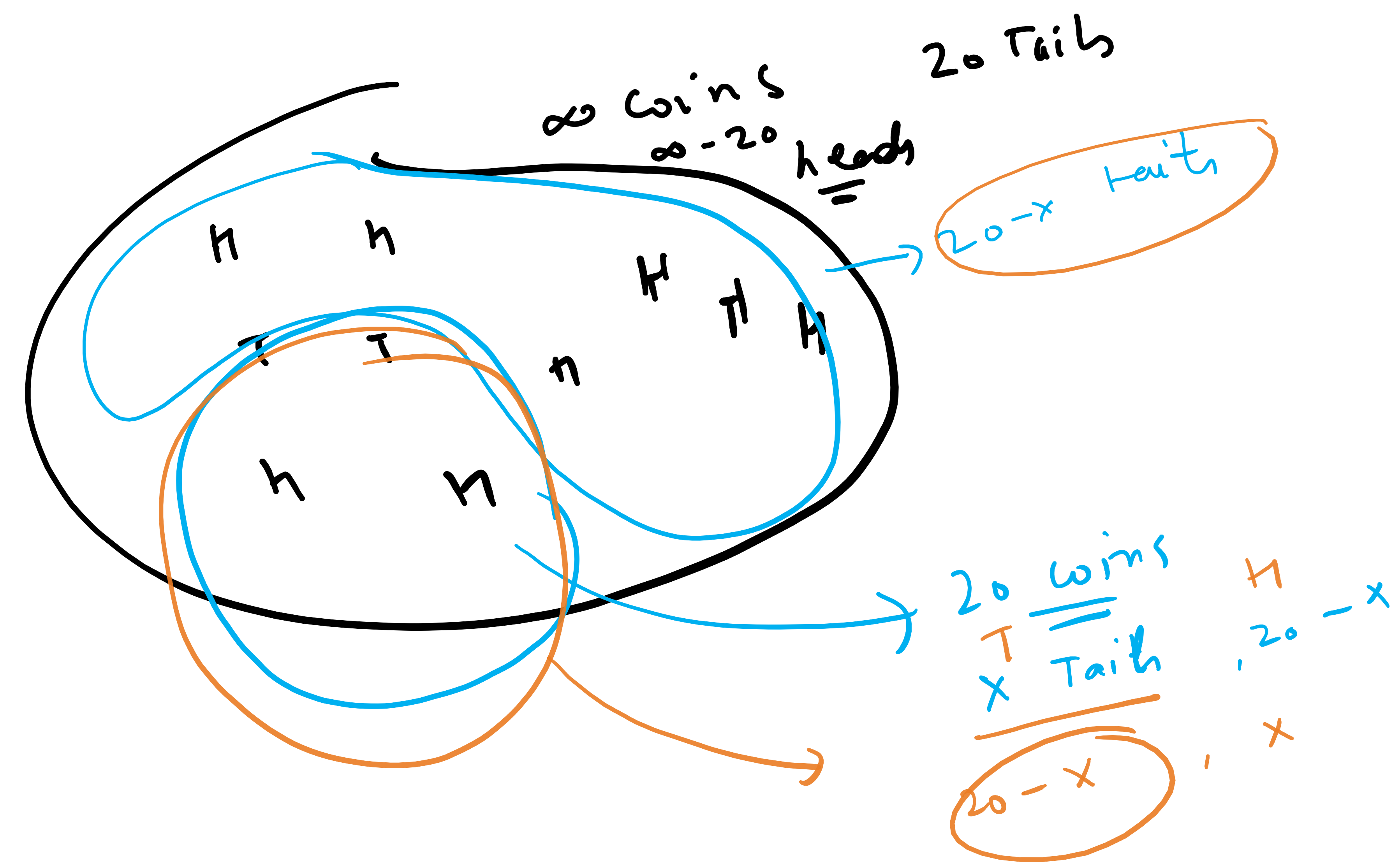
$$O\left(\frac{\log N}{P} + P\right)$$

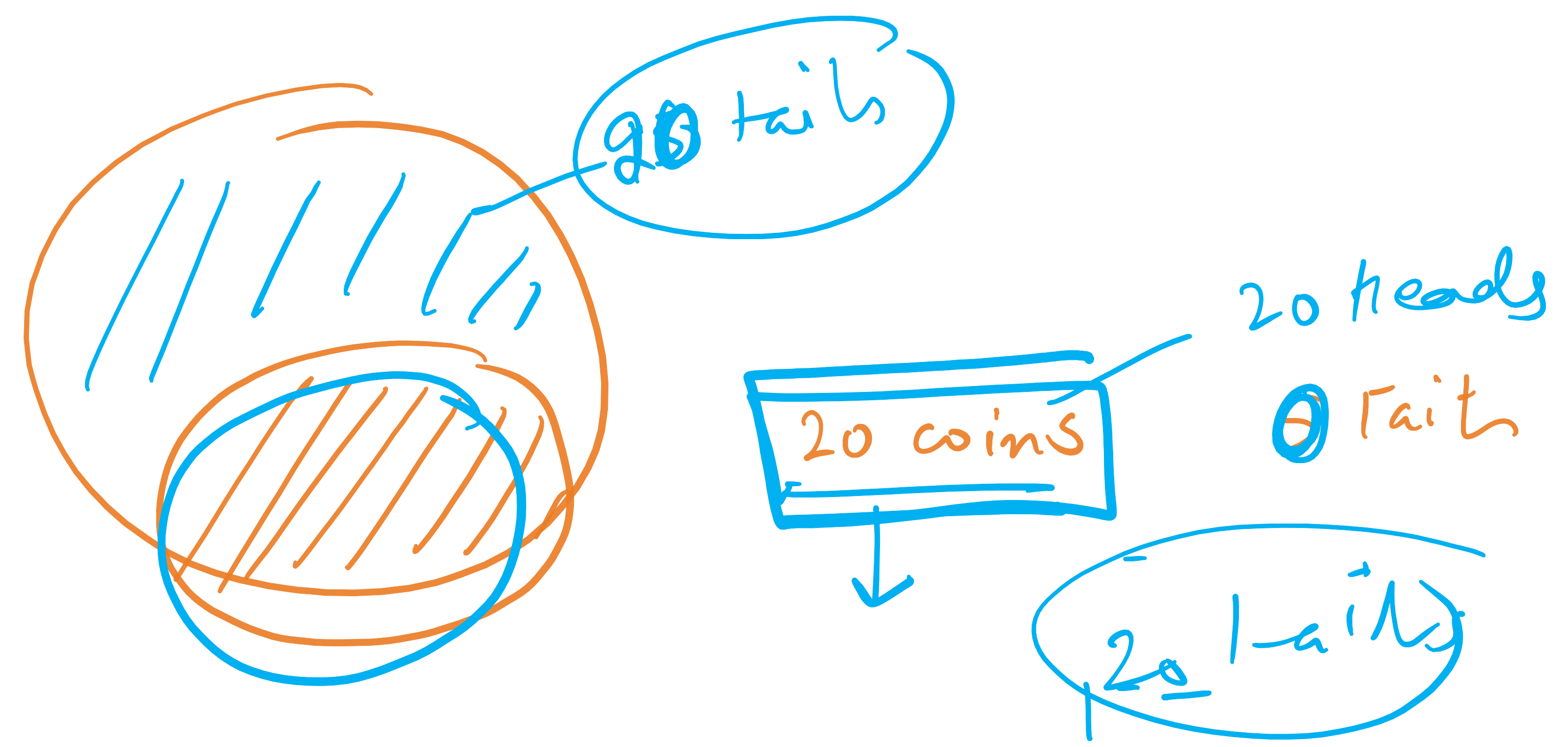
3, 4, 5, 6

$$\log N +$$

$$P \log 10.$$







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