

infix \rightarrow

$$2 + \boxed{6 * 4} / 8 - 3$$



$$2 + \underbrace{24 / 8} - 3$$

$$\underbrace{2 + 3} - 3$$

$$\underbrace{5 - 3}$$

1
2 \leftarrow

Let

$\star /$

$+$

$(\)^*$

\uparrow

PC

\rightarrow

infix

\rightarrow [

pre

post

$a + b$

$+ ab$

$ab +$

$a + b$
 postorder

$\star /$
 $+ -$

$$2 + 6 * 4 / 8 - 3$$

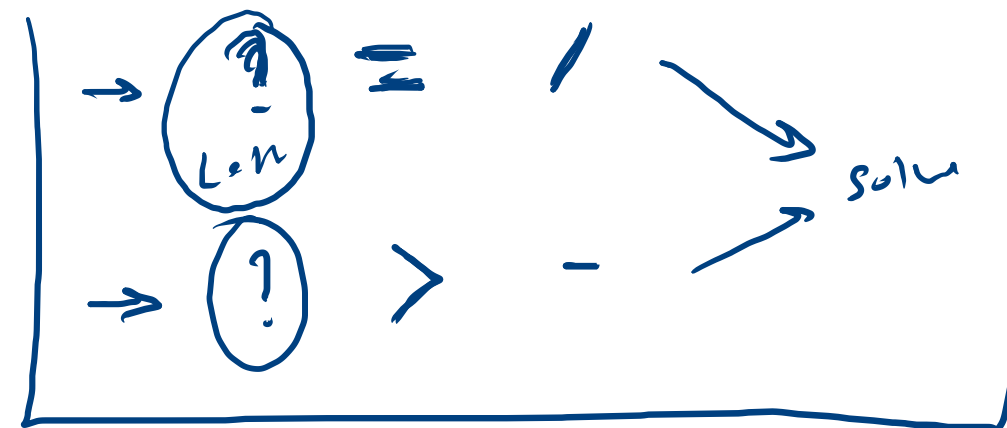


$$2 + (6 * 4) / 8 - 3$$

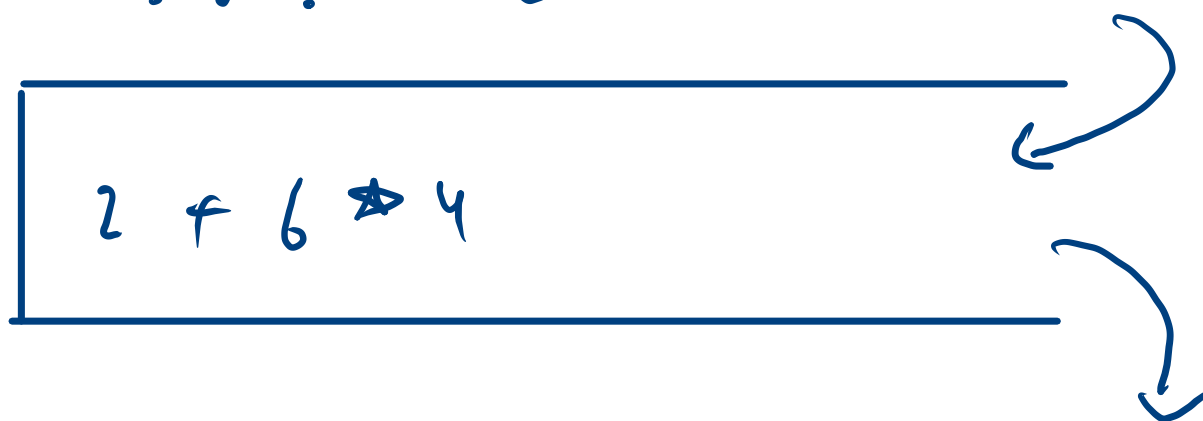
$$2 + [24 / 8] - 3$$

$$2 + 3 - 3$$

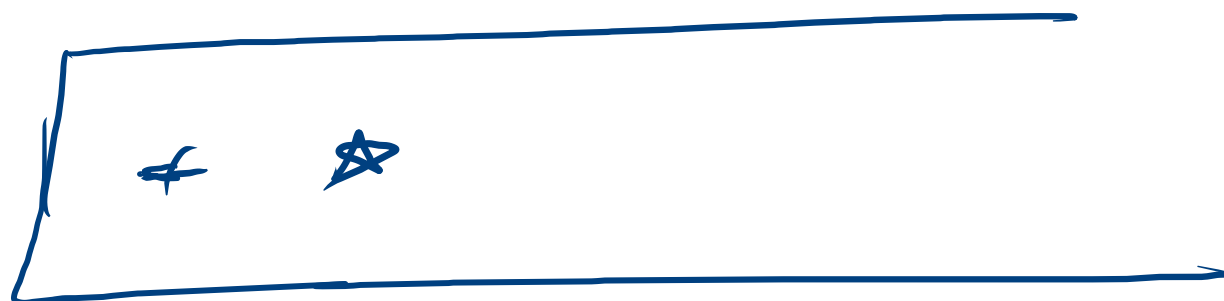
5



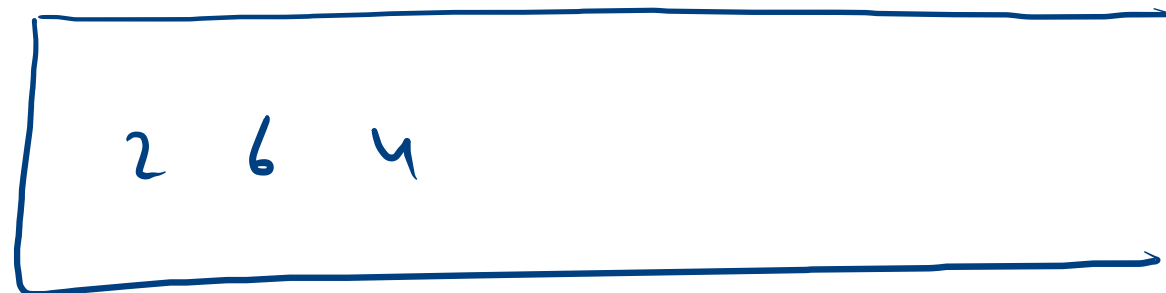
$$2 + 6 * 4 / 8 - 3$$



op stack



number



! \geq cur \rightarrow solve

$*$ / $\rightarrow 2$

$+$ - $\rightarrow 1$

1

$$2 + \boxed{6 * 4} / 8 - 3$$

2

$v1 + v2$

$$s - 3 = 2$$

op = -

operator

! \geq cur \rightarrow solve

~~*~~ \geq / ★ / \rightarrow 2

/ \geq - + - \rightarrow 1

$+ \geq -$

2

number

$$v2 = 3$$

$$v1 = 5$$

? \geq cum

\rightarrow

$$2 + 6 * 4 / (8 - 3)$$

$$2 + 6 * 4 / 5$$

$$2 + 24 / 5$$

$$2 + 6 * 4 / (8 - 3)$$

$$\downarrow$$
$$2 + 24 / (8 - 3)$$

$$2 + 24 / 5$$

$$2 + 4$$

$$6$$

$$* / \rightarrow 2$$
$$+ - \rightarrow 1$$

while (op peek != '(')
 solve

op.pop
) → loop

numbr → push value
 operatr → check op.priety solve
 add curr

(→ add op

) → solve until (

(→ pop

solve

2 + 6 * 4 / (8 - 3 * 1) + 2

2 + 24 / 5

v1 - v2

op = -

/

+

or v

? ≥ cur

+ ≥ *

* ≥ /

+ ≥ /

(≥ -

- > = *
 / > = +

* / → 2

+ - → 1

(→ 0

v2 = 3

v1 = 8

→ 8

24

2

int

$$a + b * c - d / e + f - g$$

\geq

$<$

$a + n$

★ Important

$(a - b * c)$

exp

$exp(a - b * c)$

$O(n)$

$()$

$\frac{n}{2}$

$\frac{exp(n)}{2}$

recursion

recursion

$<$

$a - b * c$

$? <$

$a + (b * c)$

exp 100

$((((($

so $((((($

$((((($

$a * b + c$

max 3

$n + c$

space complexity

$a + b * c + d$

$a - b - c$

$++ * 3$

$(a + b * c)$

$n - c$

constant

prel. 5x

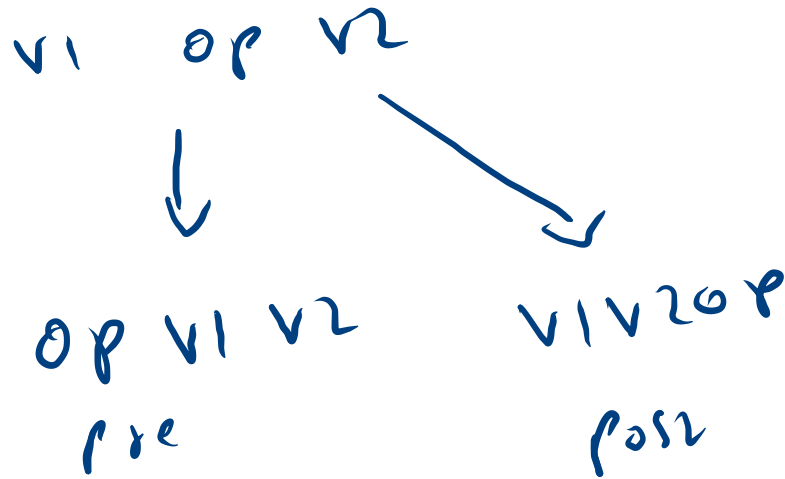
$$a * (b - c + d) / e$$

$$a^* \overline{(-bc + d)} / e$$

$$a \star + - b c d / e$$

$$\star a + -bcd / e$$

/ ~~a~~ f - b i d e



$priority \rightarrow$
 ~~$priority < ()$~~ \rightarrow
 $infix \rightarrow a + b$
 $prefix \rightarrow +ab$
 $post \rightarrow ab +$

$$a * (b - c + d) / e$$

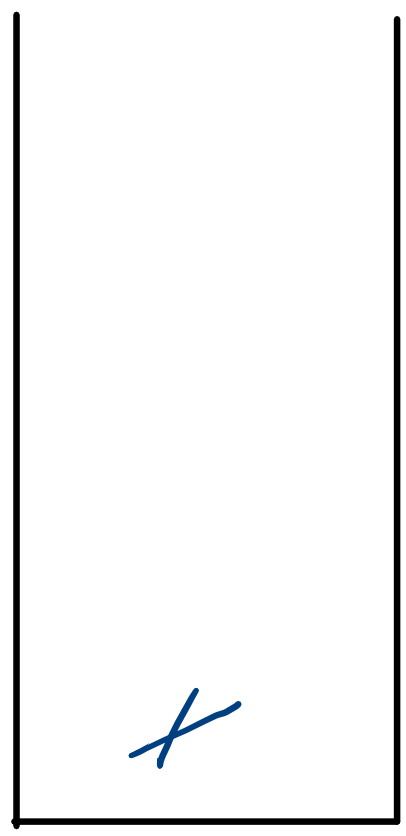
-bc
 v1 op v2
 ↓
 op v1 v2

v1 op v2
 ↓
 v1 v2 op

? > cur
 - > +
 * > /

int b = ?
 int c = ?
 int ans = (b - c)
 → -bc

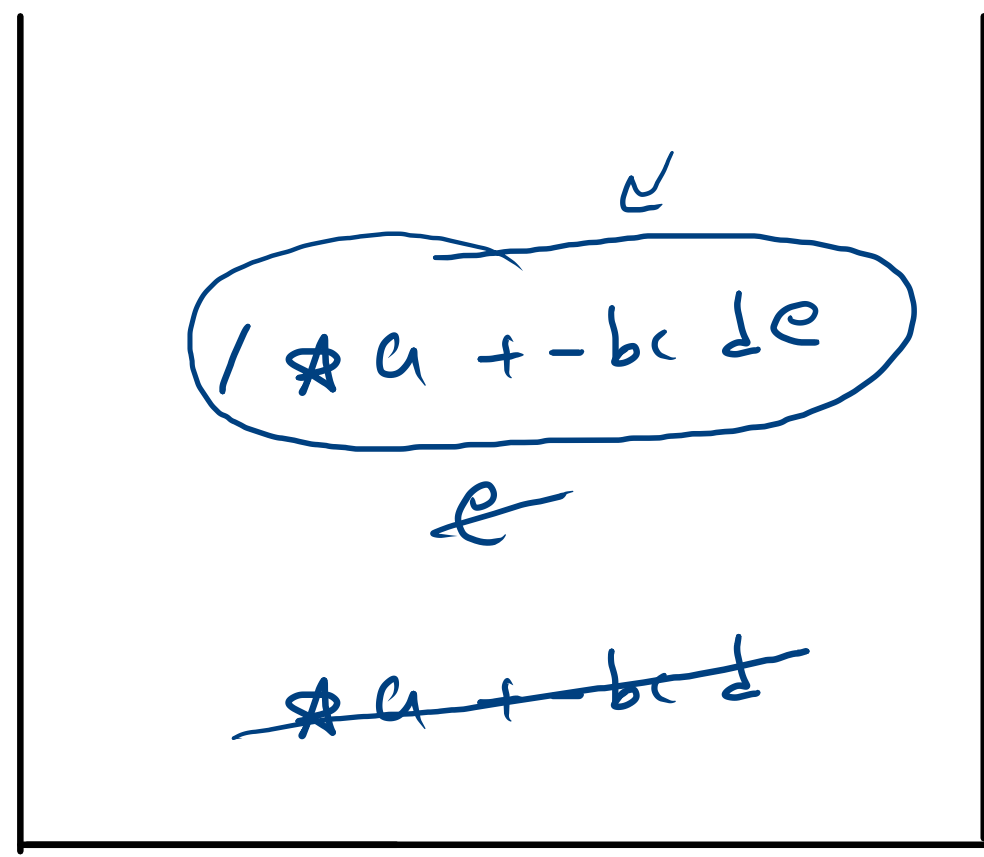
character



operator

op = /

string

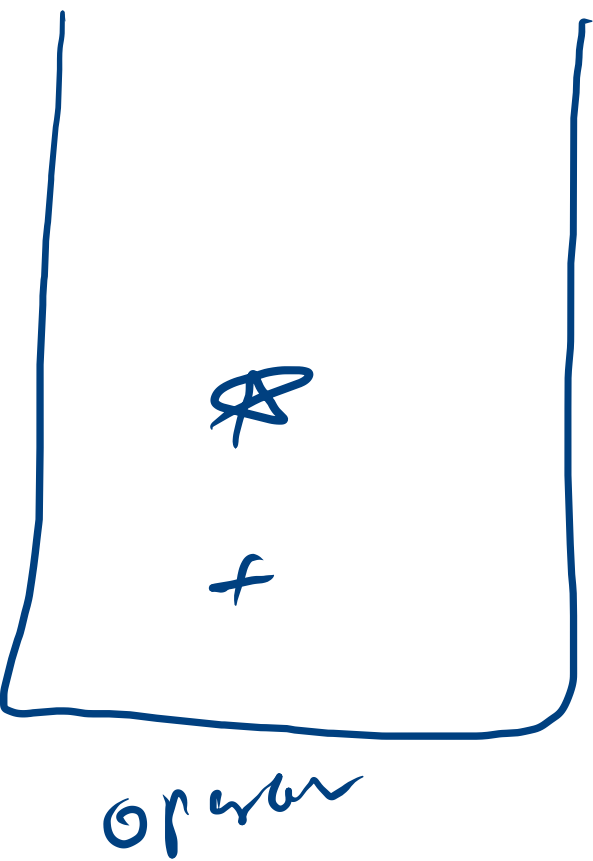


prefix

v2 = e

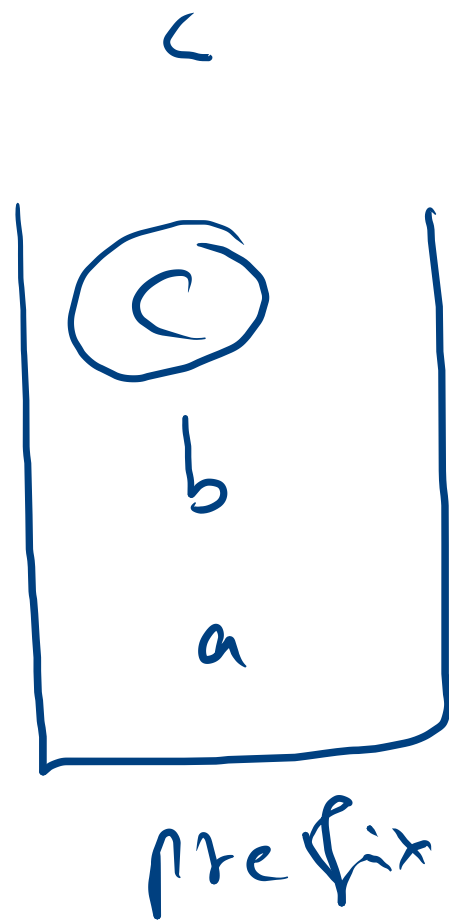
v1 /*a+-bcd

parsed

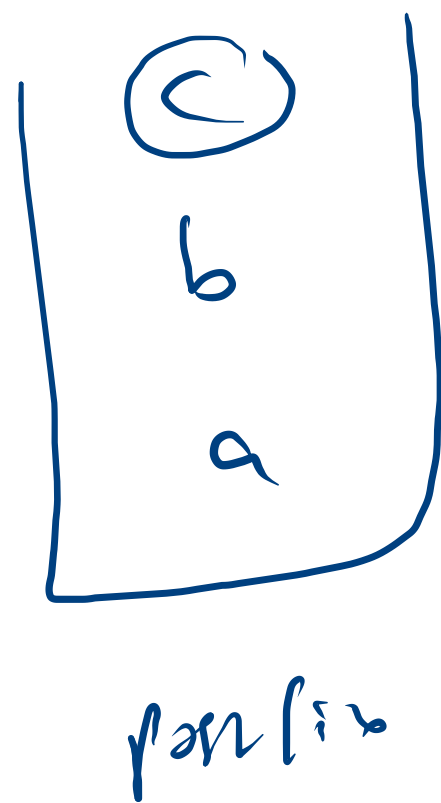


$a + b$ ~~*~~ <
 , , , • •

postfix



<



$$264 \times 8 / + 3 -$$

ab*

$$2 \quad 24 \quad 8 / + 3 -$$

a b /

$$2 \quad 3 \quad + 3 -$$

a b +

$$5 \quad 3 -$$

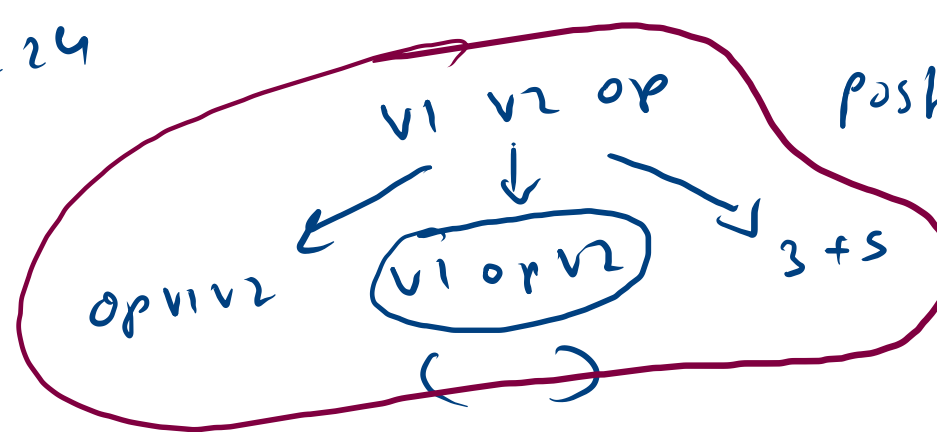
$$(2) \preceq$$

☆ pre r...

☆ Direction
v1 v2 op

[pre r eval convg]
N.W.

$$(6 \times 4) = 24$$



postfix

ab +

$$(a \times b) + a b$$

$$a + b - c$$

$$a + b - c$$

$$a + b * c - d$$

$$a + b * c - d$$

$$a + b * c + d$$

$$a + b * c + d -$$

$$a / (b + c)$$

$$a / b + c$$

$$a (b + c) /$$

$$a n /$$

$$a (b + c) /$$

$$a \quad b + c \quad /$$

$$a / b + c$$

$$264 \times 8 / + 3 -$$

$$2 \quad 24 \quad 8 / + 3 -$$

$$\begin{array}{cc} 2 & 3 & + 3 - \\ a & b & + \end{array}$$

$$5 \quad 3 -$$

$$\rightarrow 24$$

$$264 \times 8 / + 3 -$$

$$\begin{array}{|c|} \hline 2 \quad / \\ \hline \end{array}$$

$$v1 \quad v2$$

$$5 - 3$$

$$v2$$

$$v1$$

$$op$$

$$\begin{array}{l} v1 \text{ or } v2 \\ v1 \text{ } v2 \text{ or } \end{array}$$

$$op = \star$$

$$v2 = 4$$

$$v1 = 6$$

$$6 \times 4 = 24$$

postfix

$$\begin{array}{l} v2 = 8 \\ v1 = 24 \\ op = / \end{array}$$

$$v2 = 3$$

$$v1 = 2$$

6x4

$$264 \cdot 8 / + 3 -$$

number	value
2	
3	
5	

str	mix
	- f2 / 6483
	<u>3</u>
	+2 / 648

str	index
	$(2 + ((648) / 8)) - 3$
	<u>3</u>
	$(2 + ((648) / 8))$

$n = 4$

(b) or c

	a	b	c	d
a	0	0	0	0
b	1	0	0	1
c	1	0	0	0
d	1	1	1	0

$mat[n][s] = 1$

n knows s

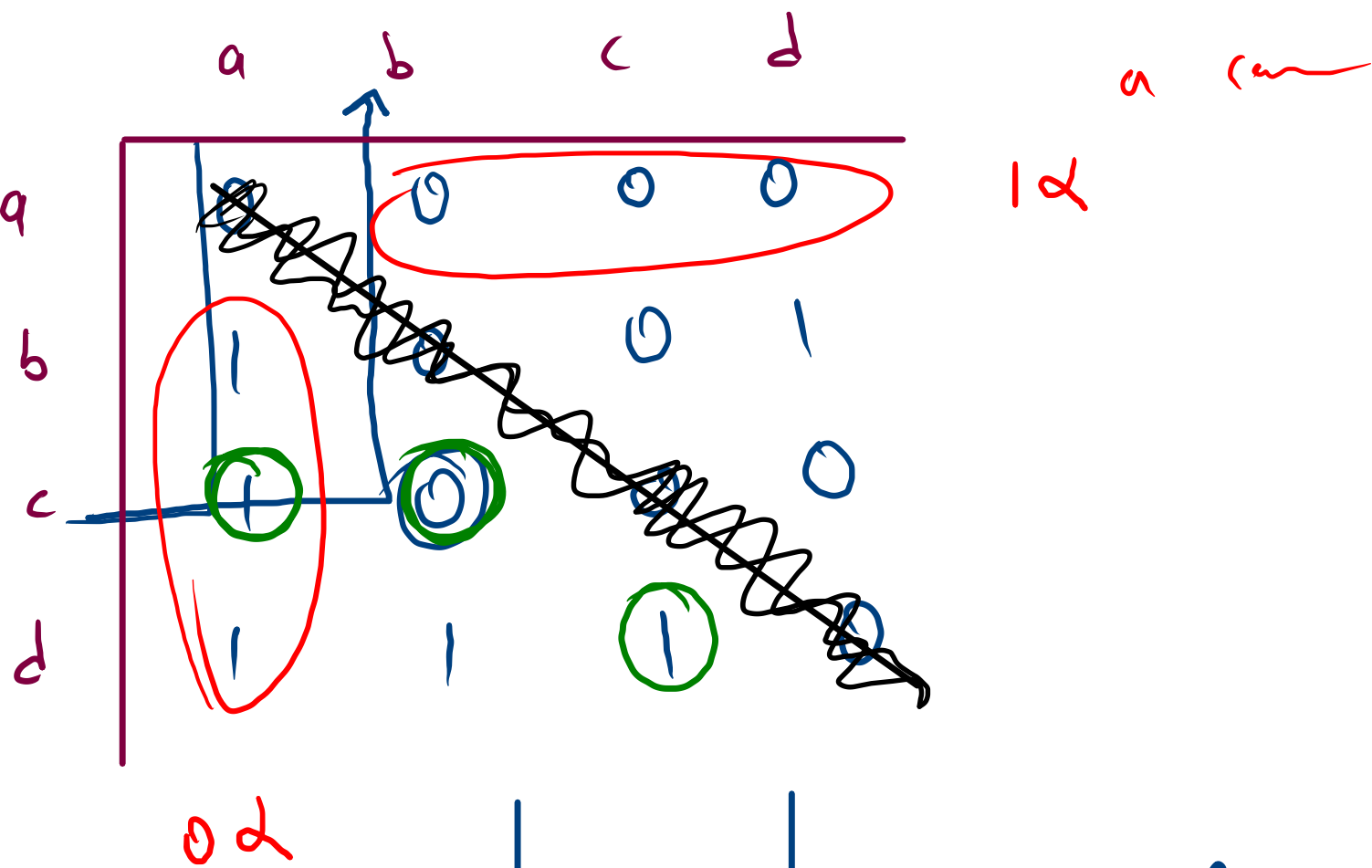
$mat[n][s] = 0$

n don't know s

↓ ↓
a 0
b 1
c 2
d 3

- celebrities know no one
- everyone know celebrities

a \nrightarrow b
b \nrightarrow a



$$ar[n][y] = 1$$

$$n \rightarrow y$$

~~n~~ ✓
y

$$ar[n][y] = 0$$

in doubt know y

✓
y n



$$ar[d][c] = 1$$

$$ar[c][b] = 0$$

$$ar[a][a] = 1$$

$a = 0$ ✓

```
boolean cel = true;
for(int i=0;i<arr.length;i++){
    if(i==a)continue;
    if(arr[a][i] == 1 || arr[i][a]==0){
        cel = false;
        break;
    }
}
if(cel){
    System.out.println(a);
}else{
    System.out.println("none");
}
```

→	0	q
	1	!
	2	
→	3	

i-0 x 23
a-0

