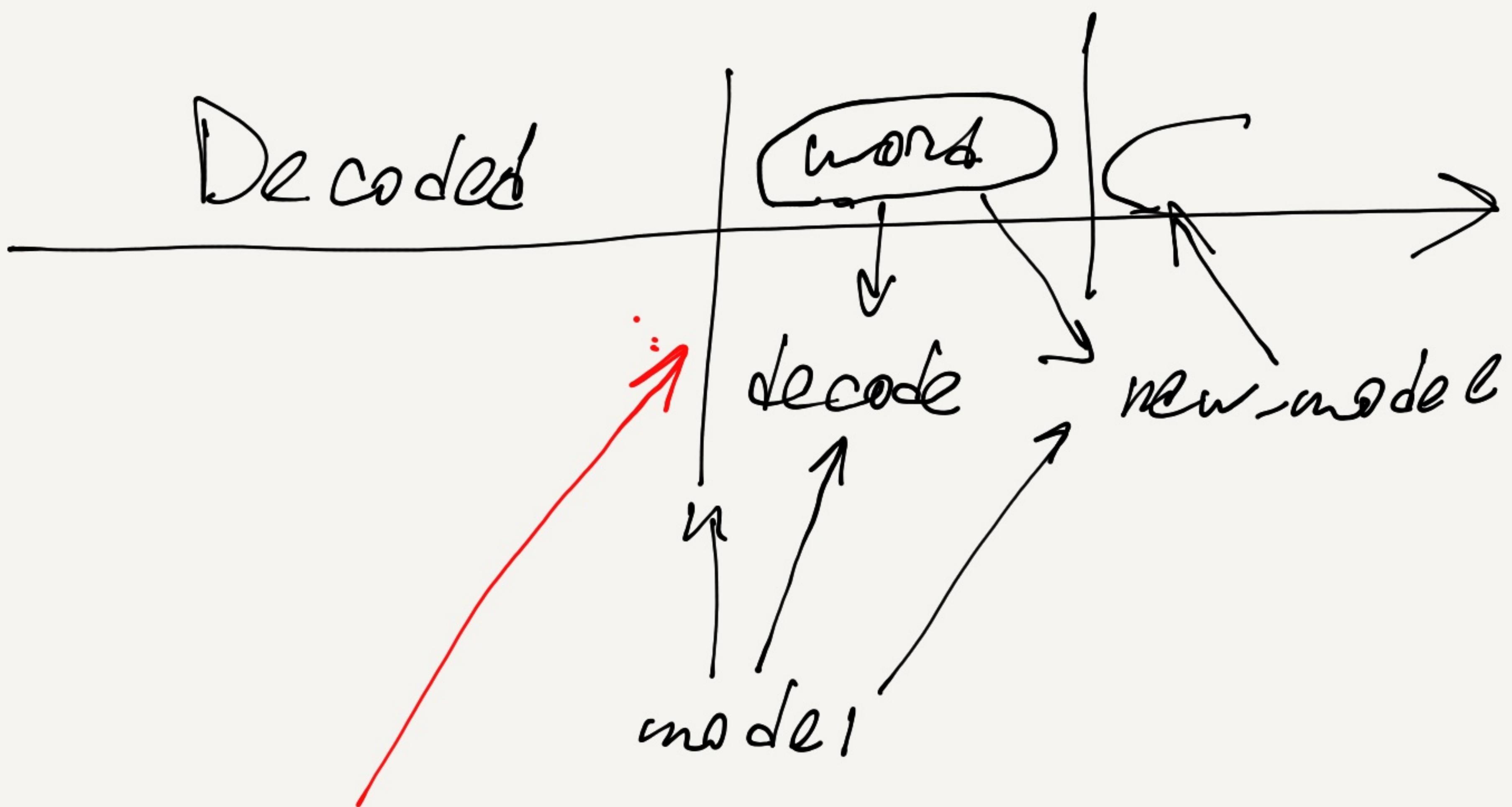
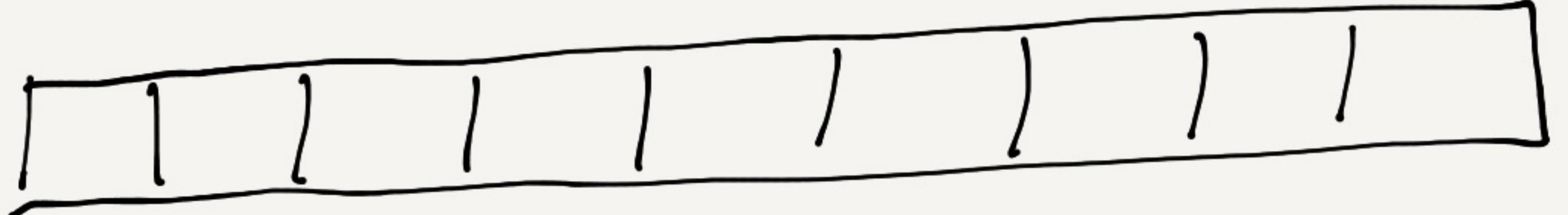


Artificial
ART

ART, A₁ | ART, A₂





ART A ART 5 ART P A
A 1 5 01 P 01.

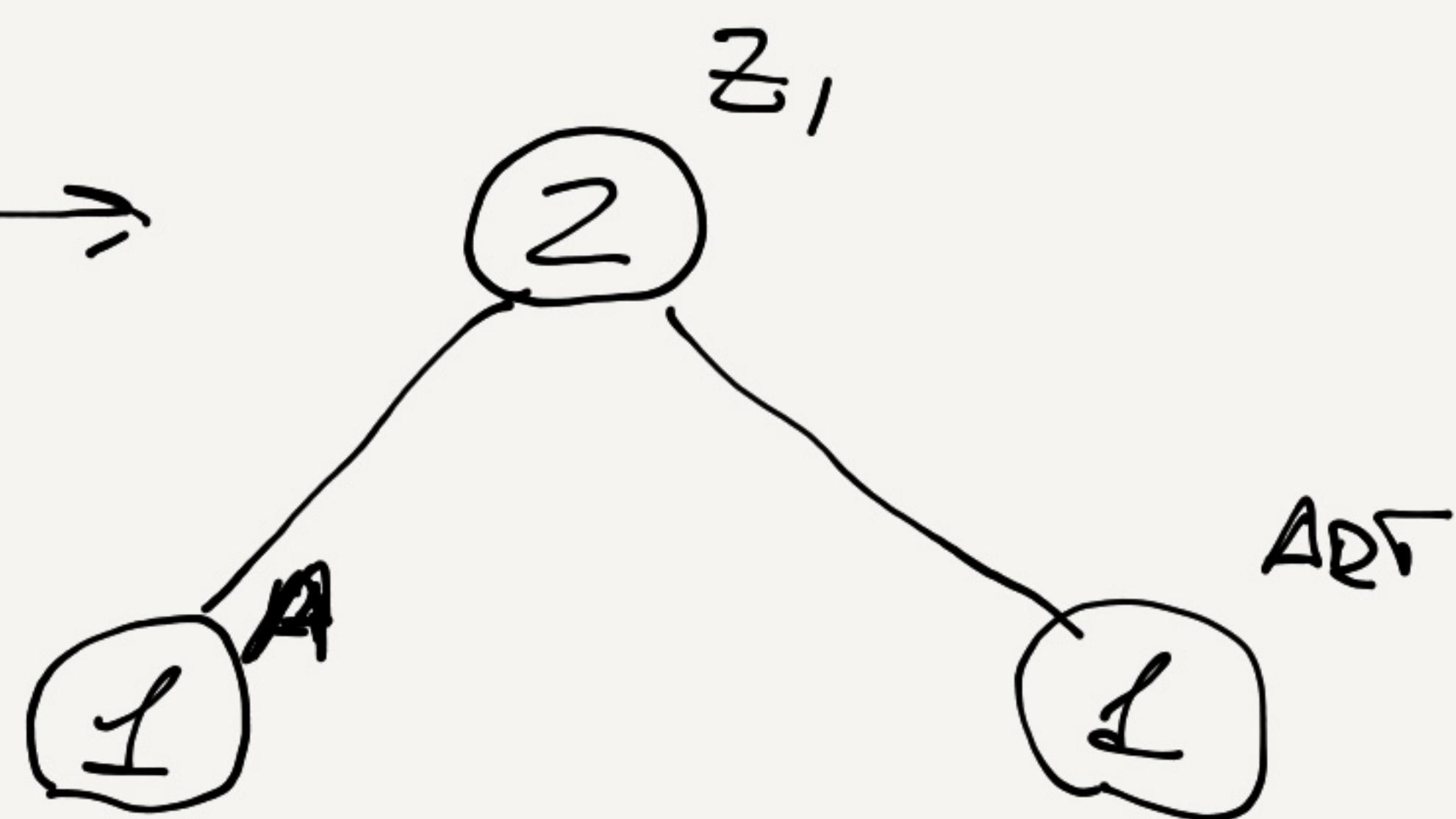
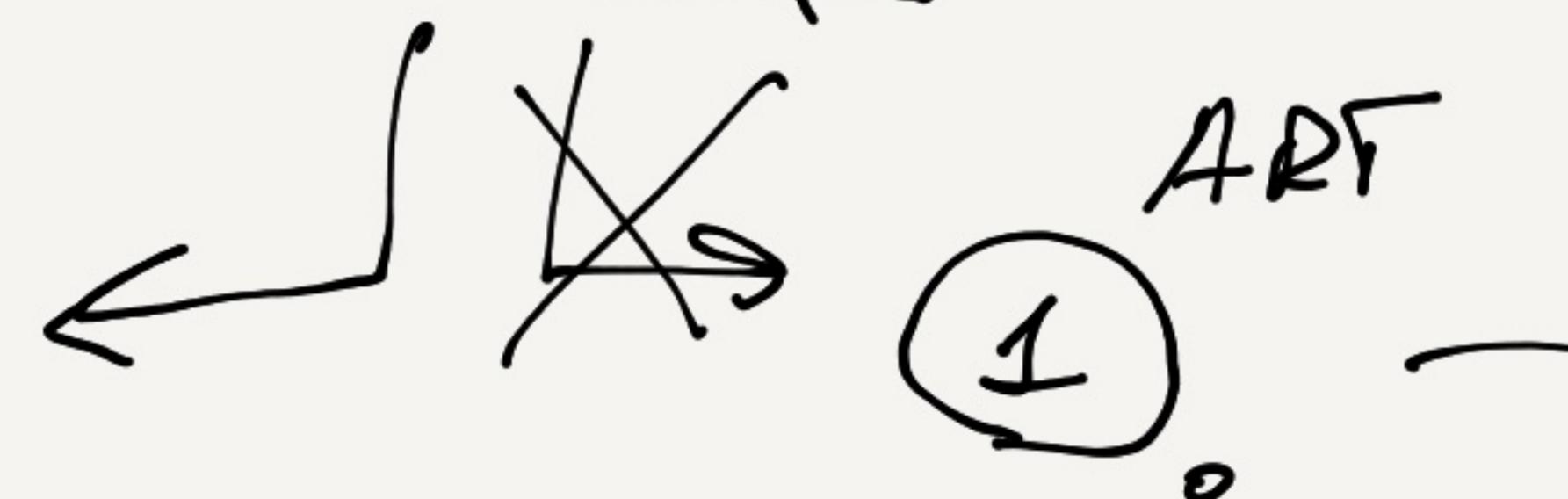
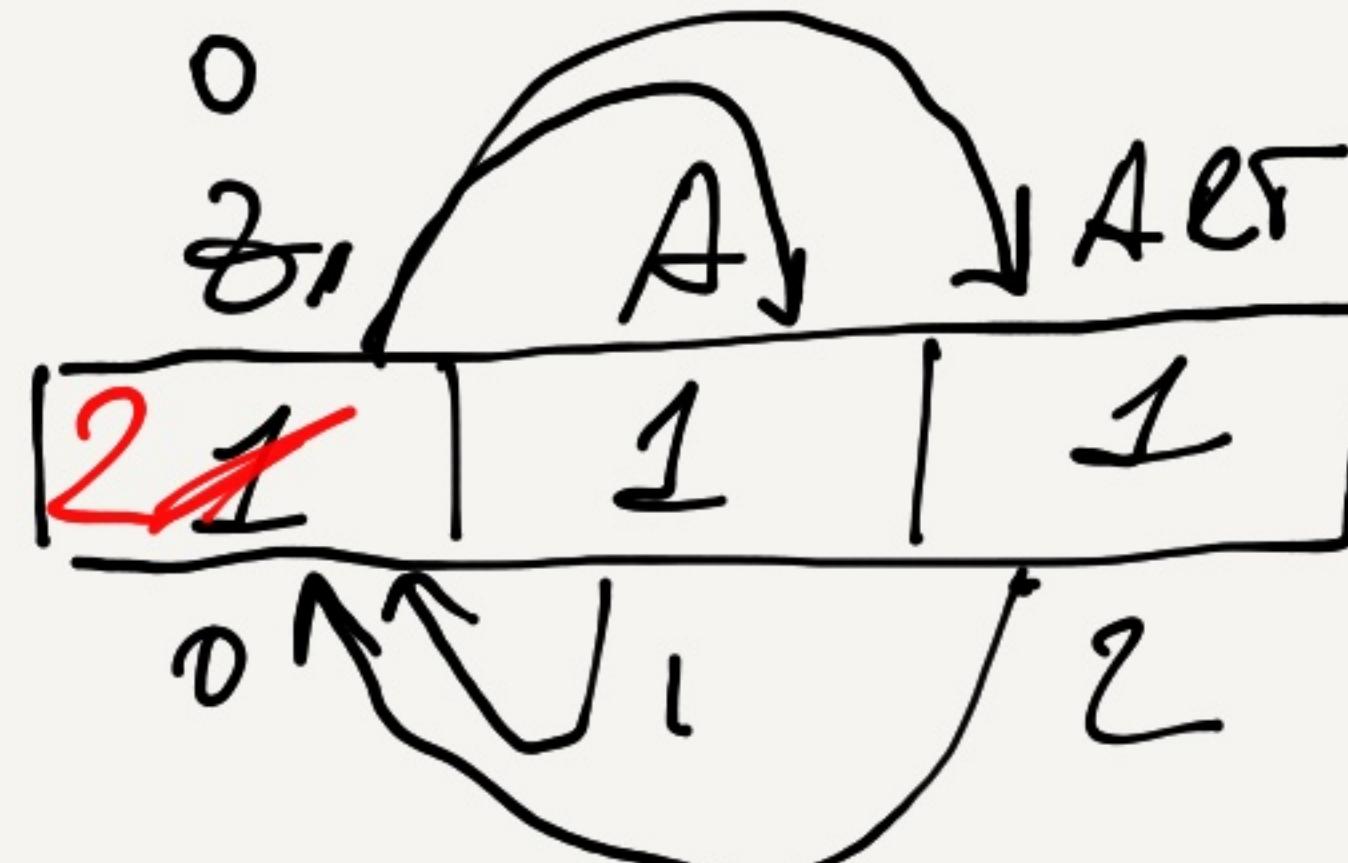
$$b_i : a_i \geq a_{i+1}$$

a_{2i+1}, a_{2i+2} - бары.

АБРАКАДАБРА

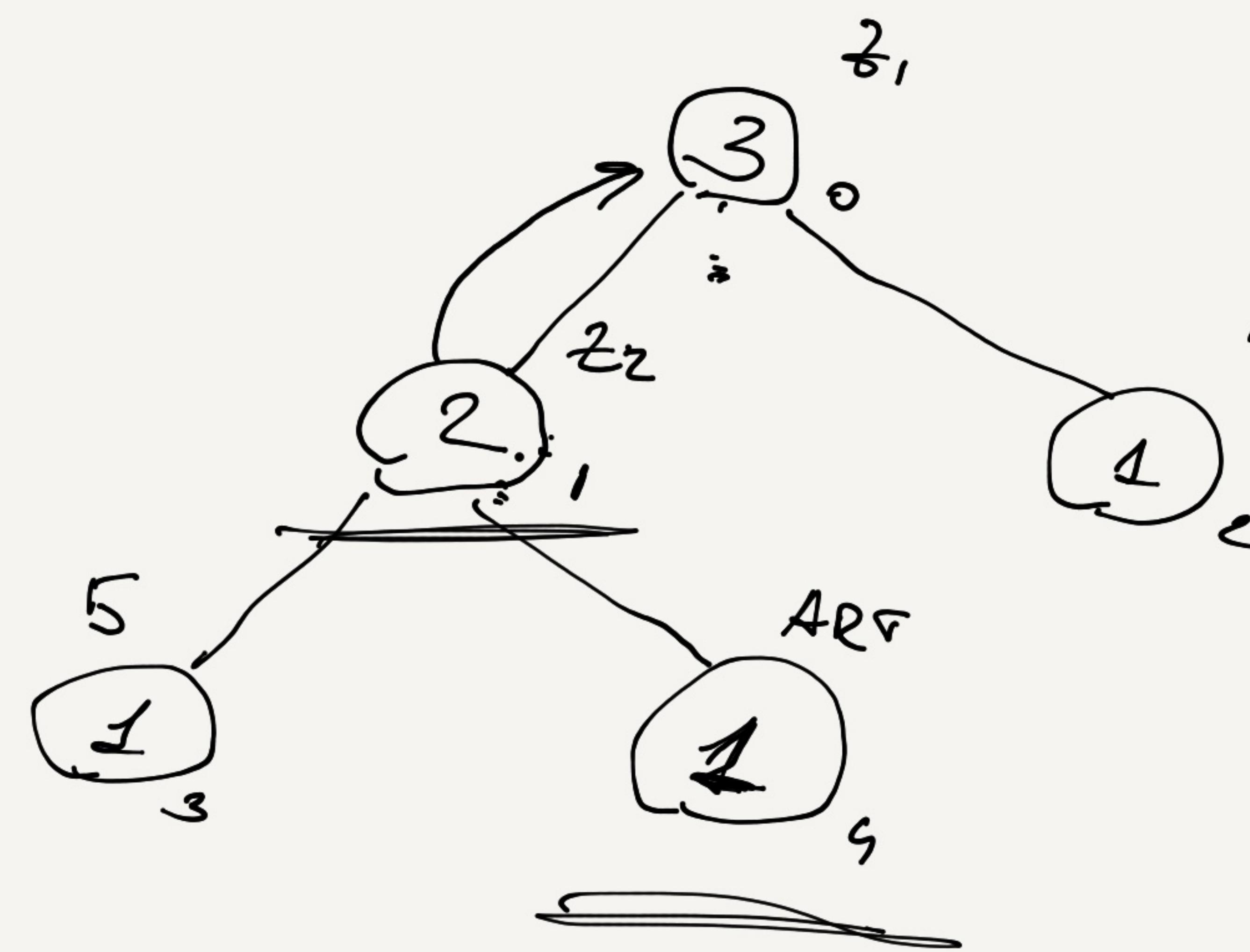
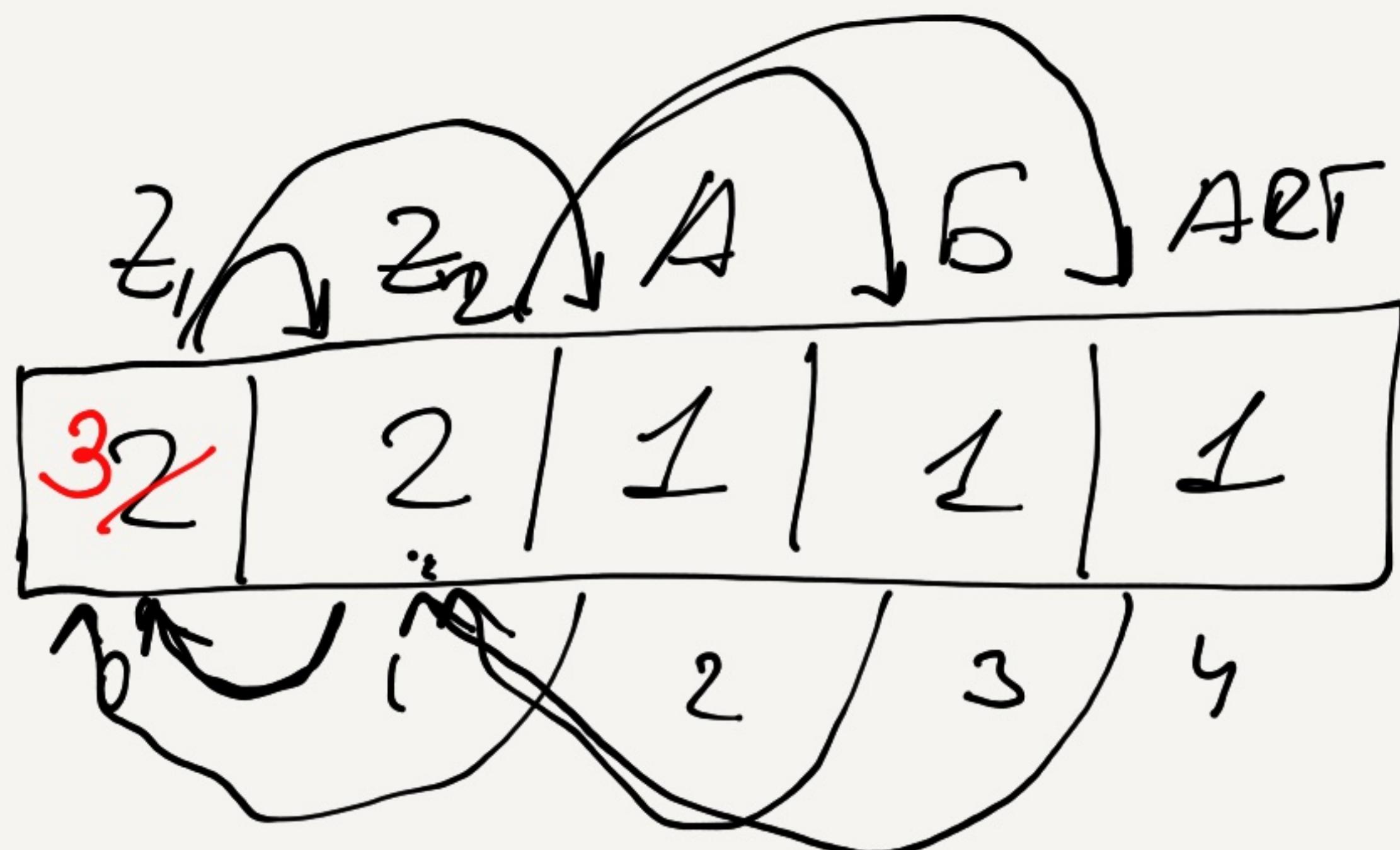
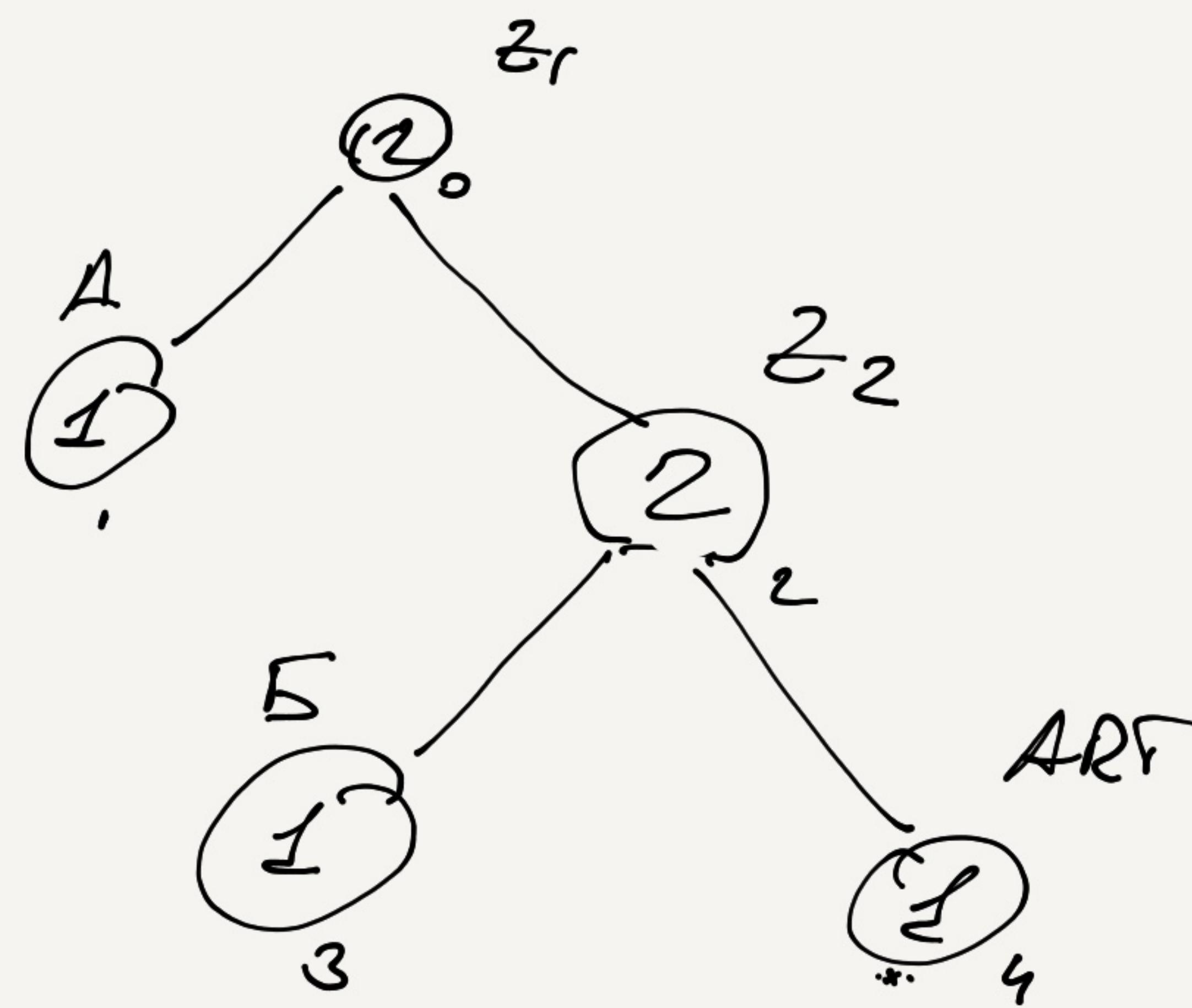
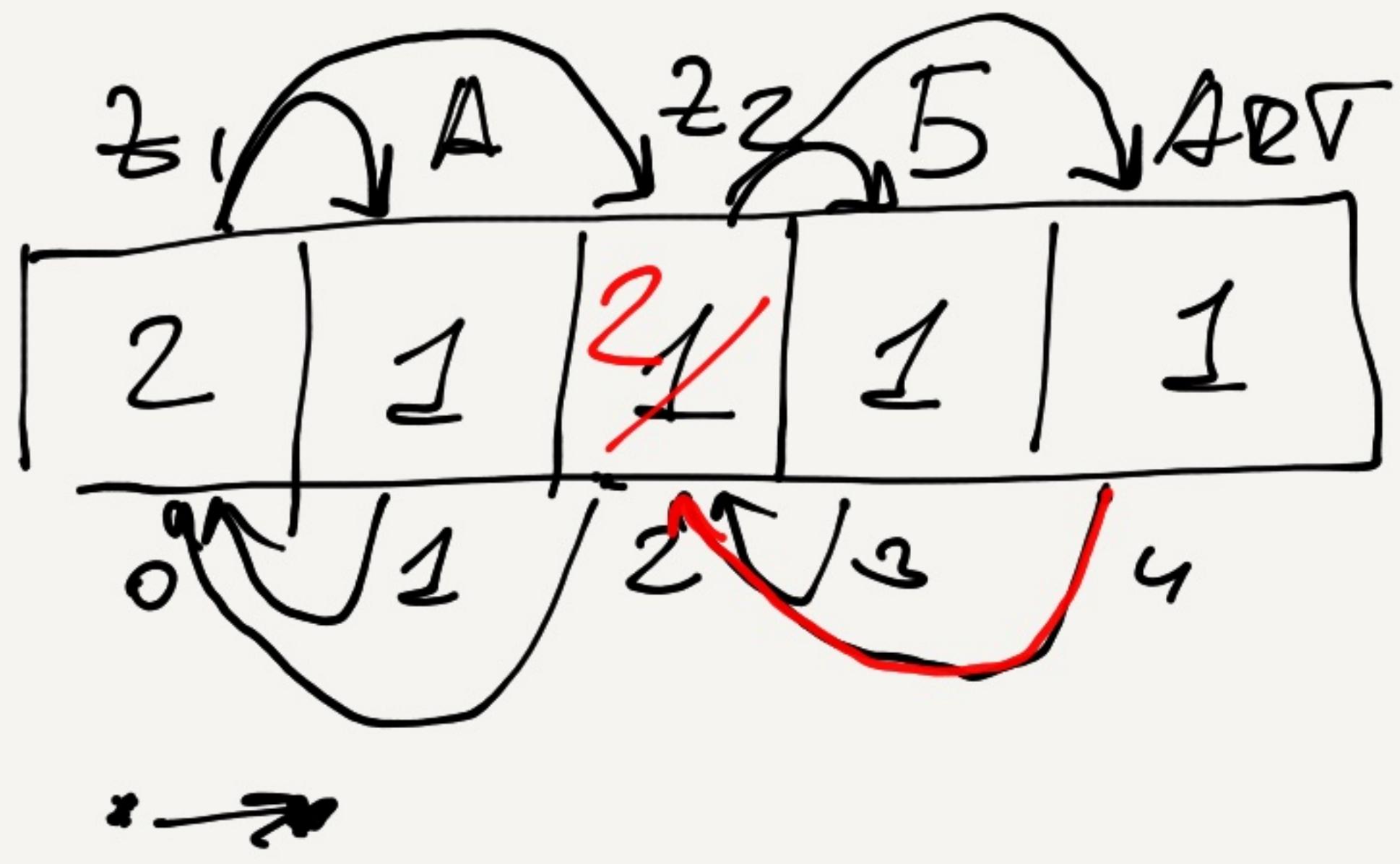
ART

1

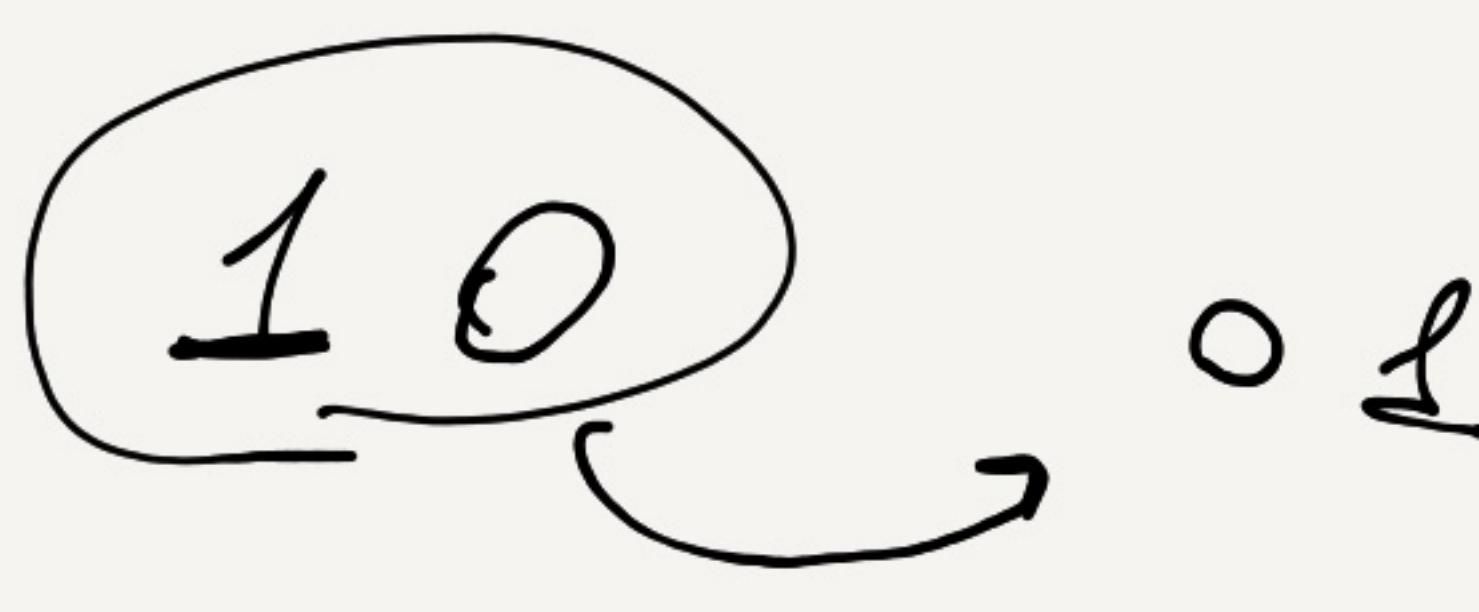


$$\text{index \% 2 == 0} \rightarrow \boxed{1 \dots \dots} \\ \text{index \% 2 == 1} \rightarrow \boxed{0}$$

~~index~~



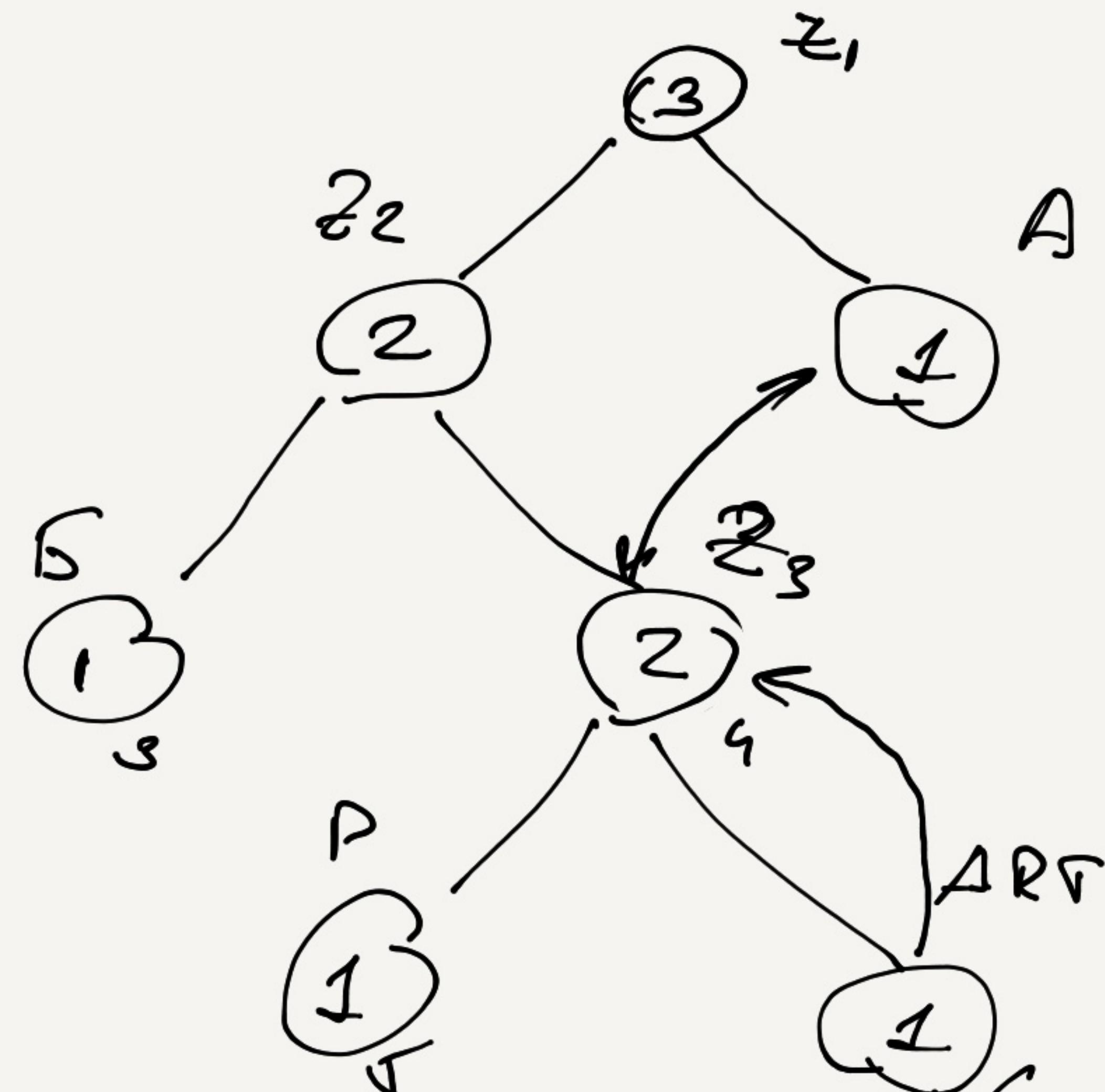
$$4 \% 2 = 0$$



$$1 \% 2 = 1$$

z_1	z_2	A	5	z_3	P	ART
3	2	1	1	21	1	1
0	1	2	3	4	5	6

Diagram showing nodes 2 and 3 connected by a curved arrow pointing from node 2 to node 3.

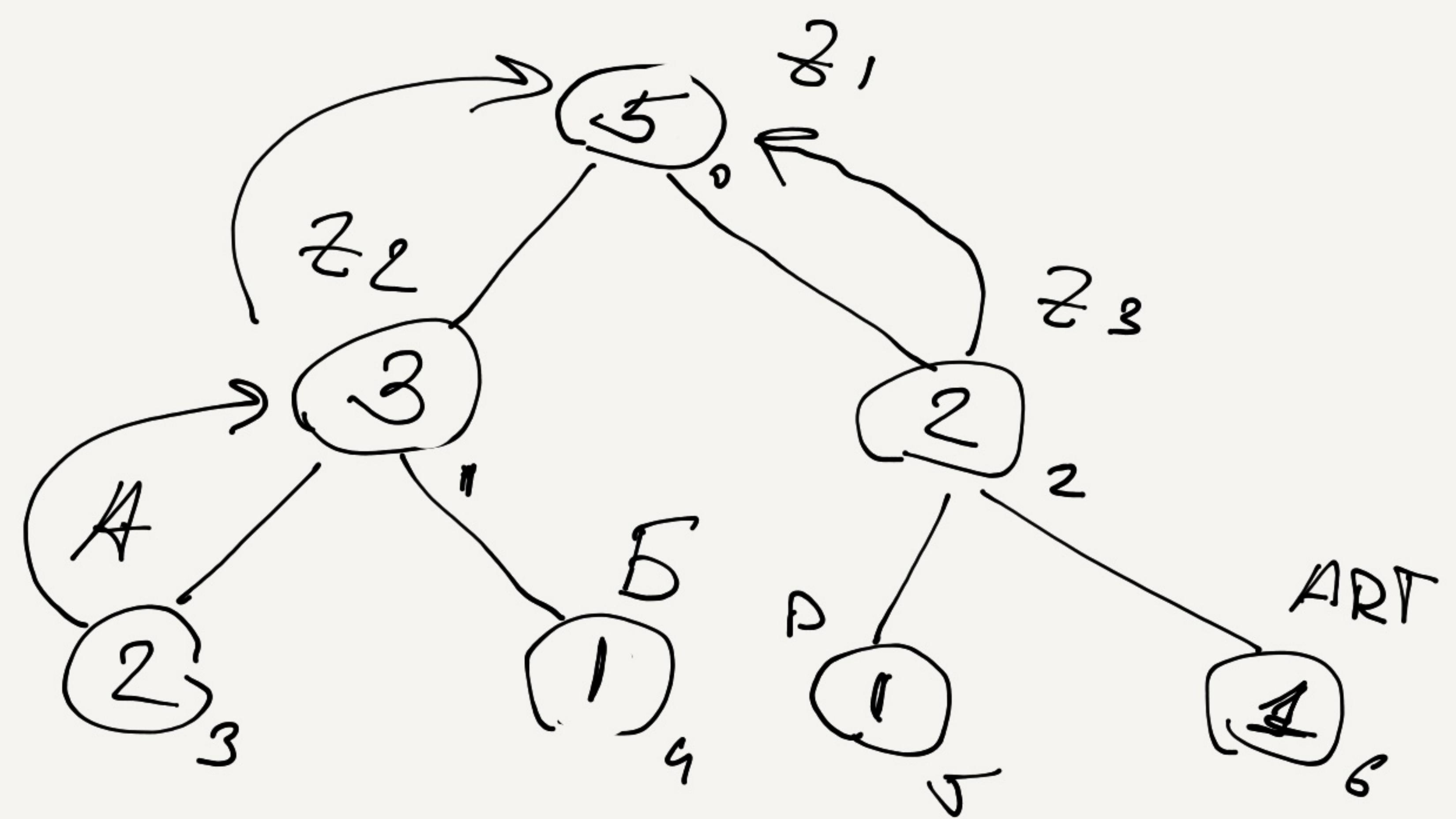


z_1	z_2	z_3	5	A	P	ART
3	2	2	1	1	12	1
0	1	2	3	4	5	6

Diagram showing nodes 2 and 3 connected by a curved arrow pointing from node 2 to node 3.

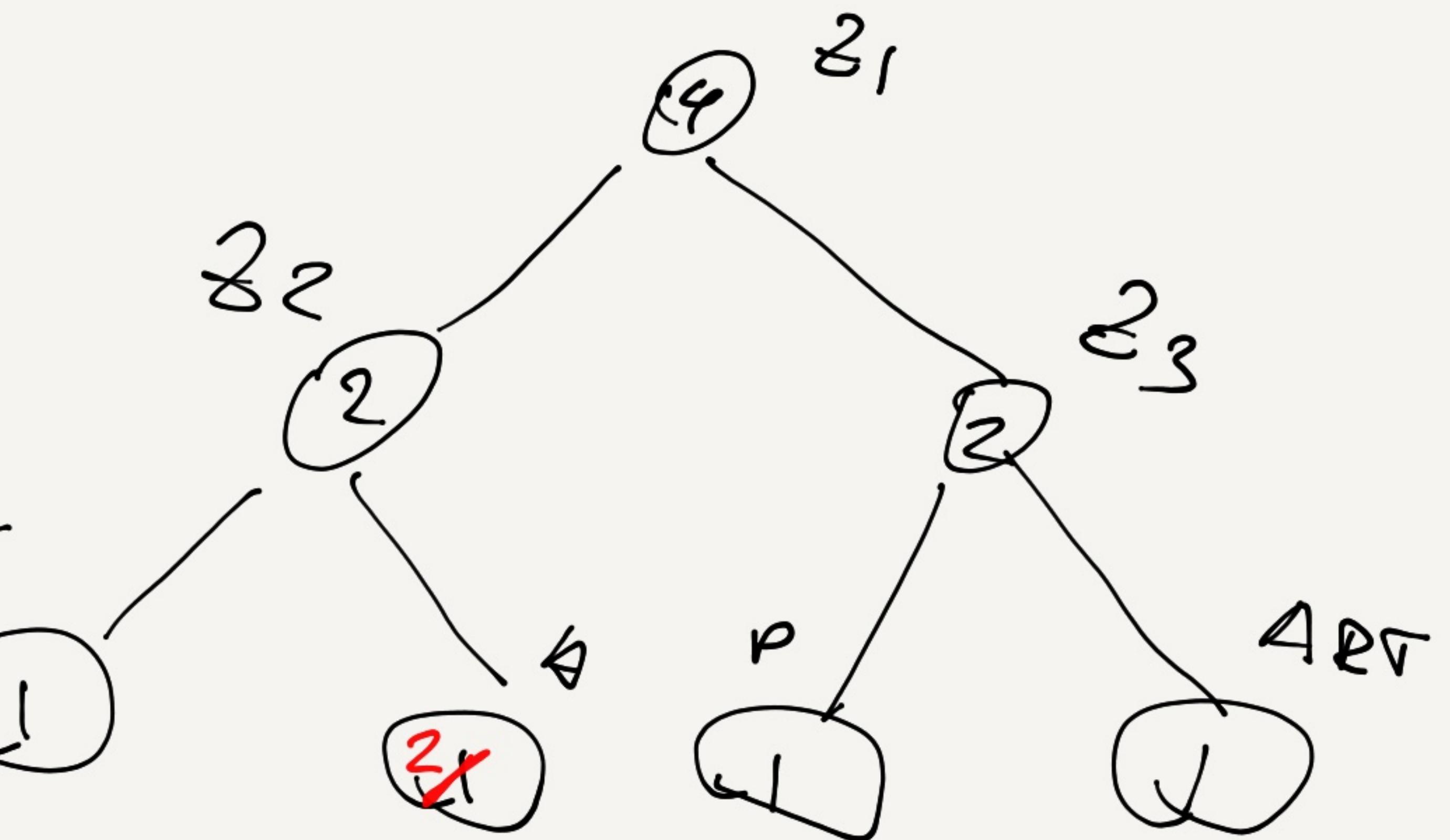
$10 \rightarrow 01$

z_1	z_2	z_3	A	5	P	ART
11	32	2	2	1	1	1
0	1	2	3	4	5	6



Z_1	Z_2	Z_3	Σ	A	P	ART
4	2	2	1	1	1	1

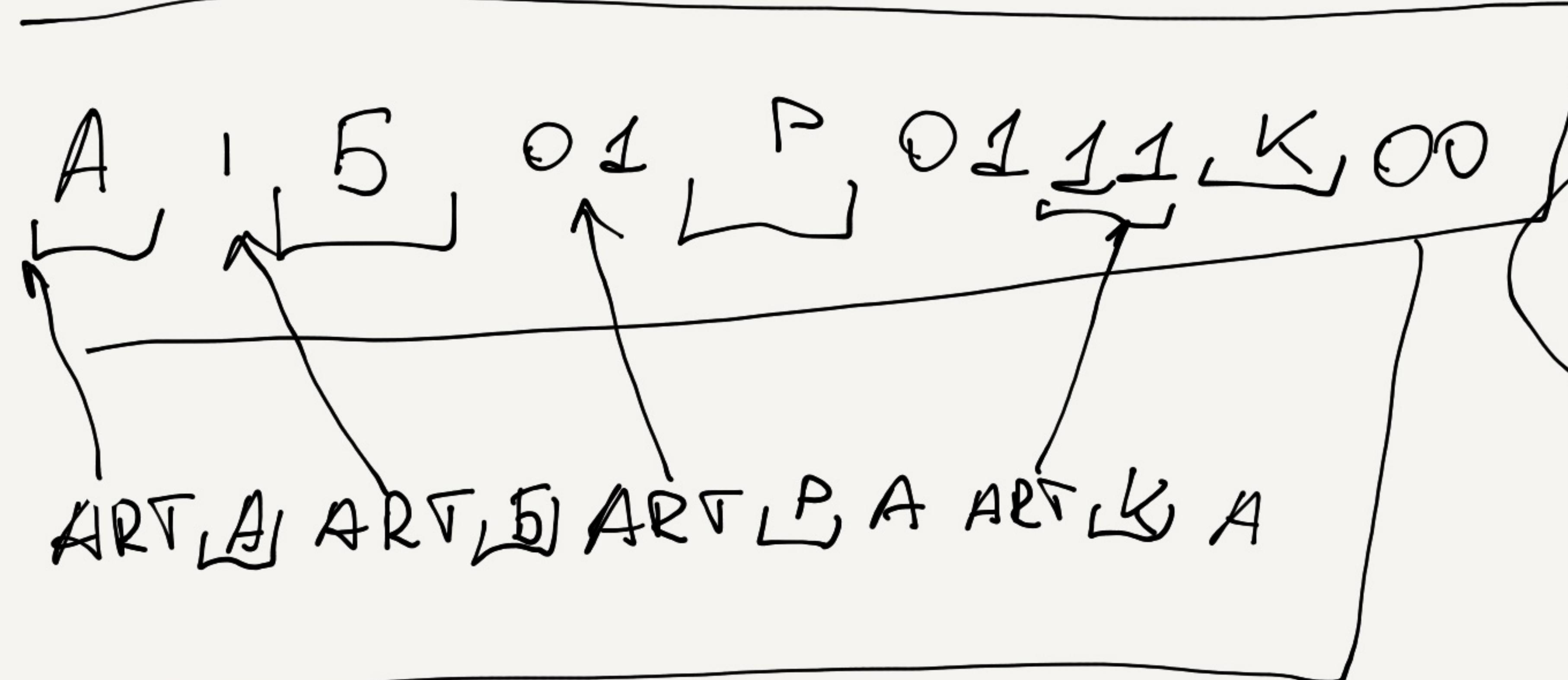
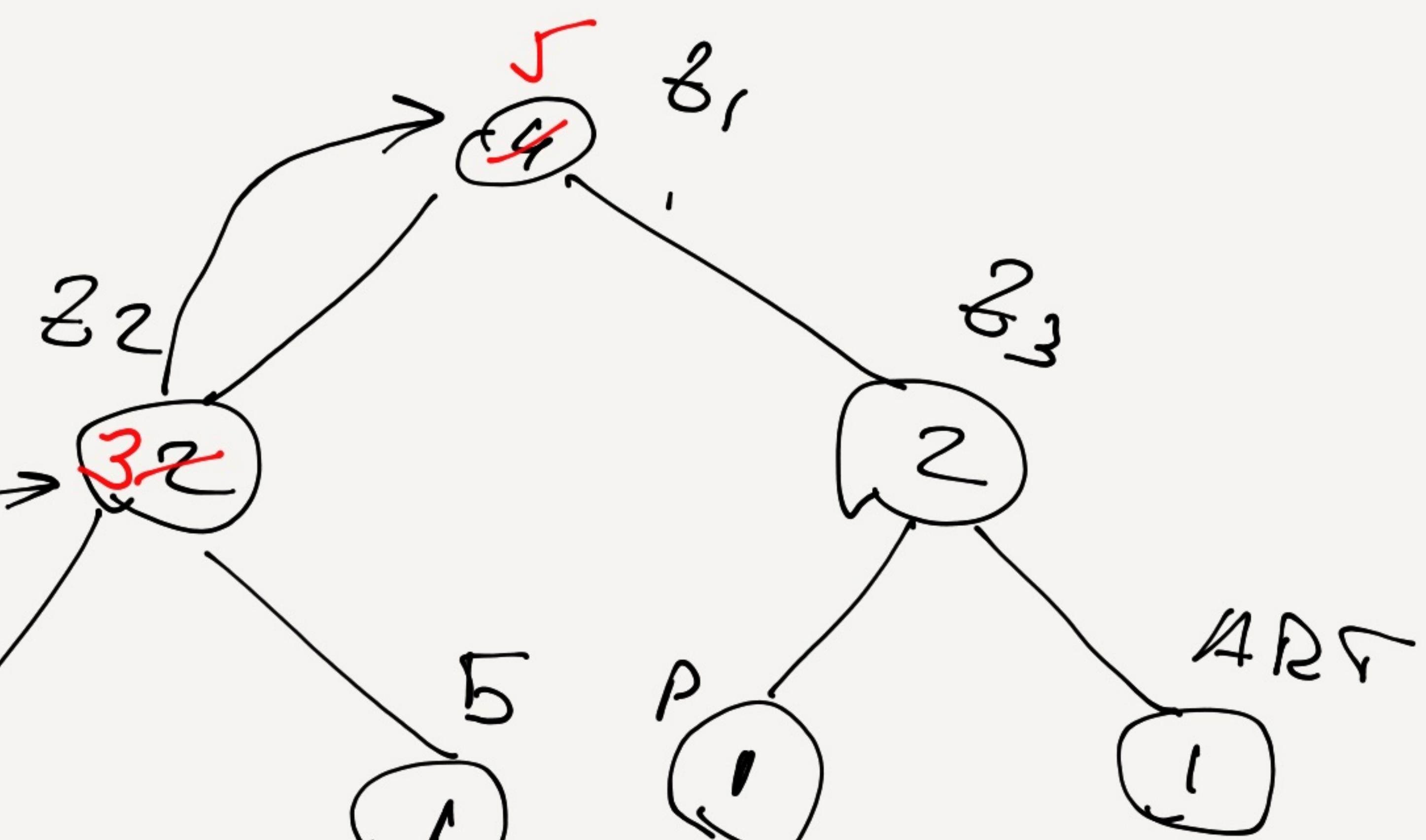
0 , 2 3 5 6



$Z_1 \xrightarrow{A} Z_2 Z_3 A \Sigma P ART$

Z_1	Z_2	Z_3	Σ	A	P	ART
✓ 4	3	2	2	1	1	1

0 1 2 3 5 6

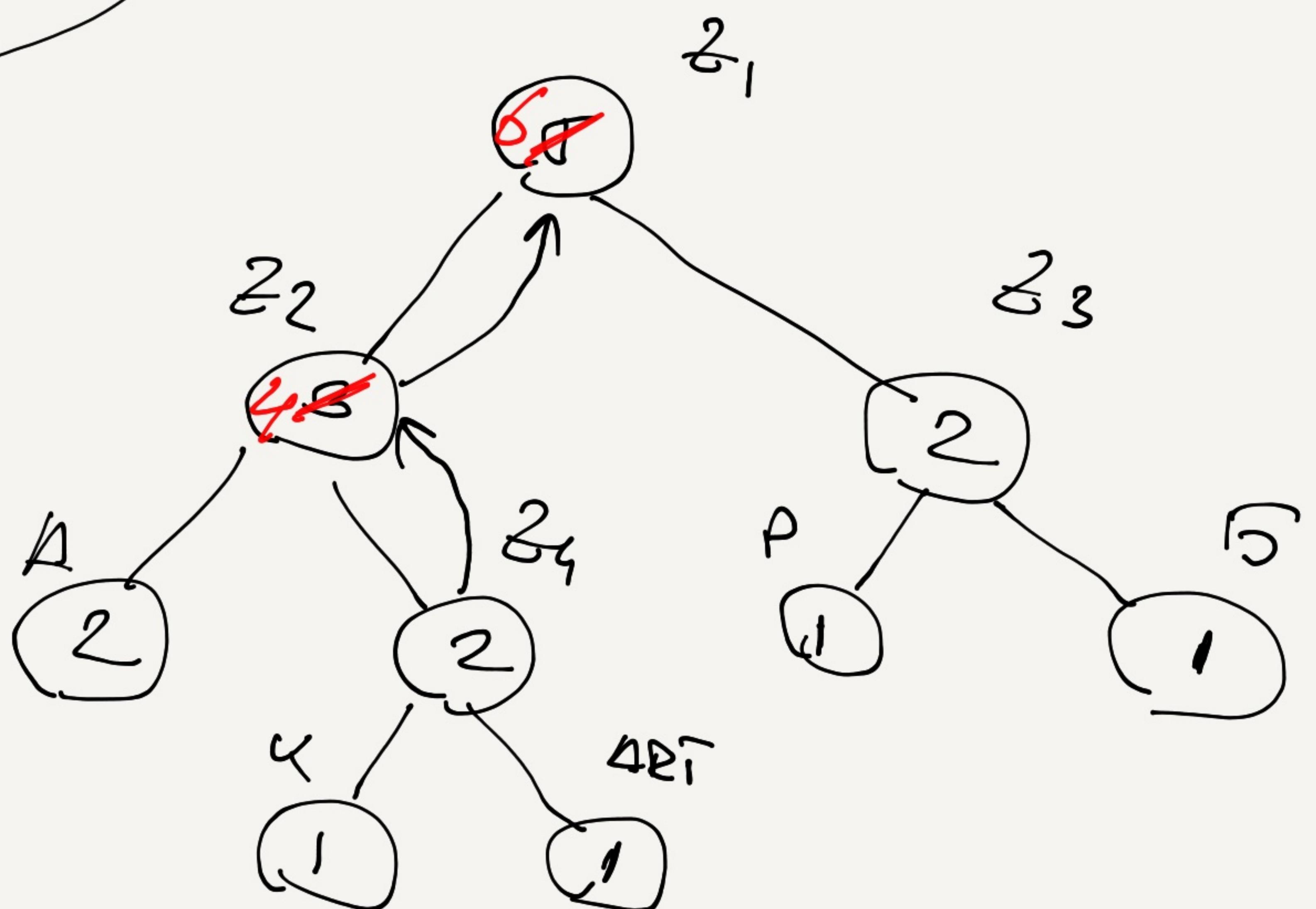
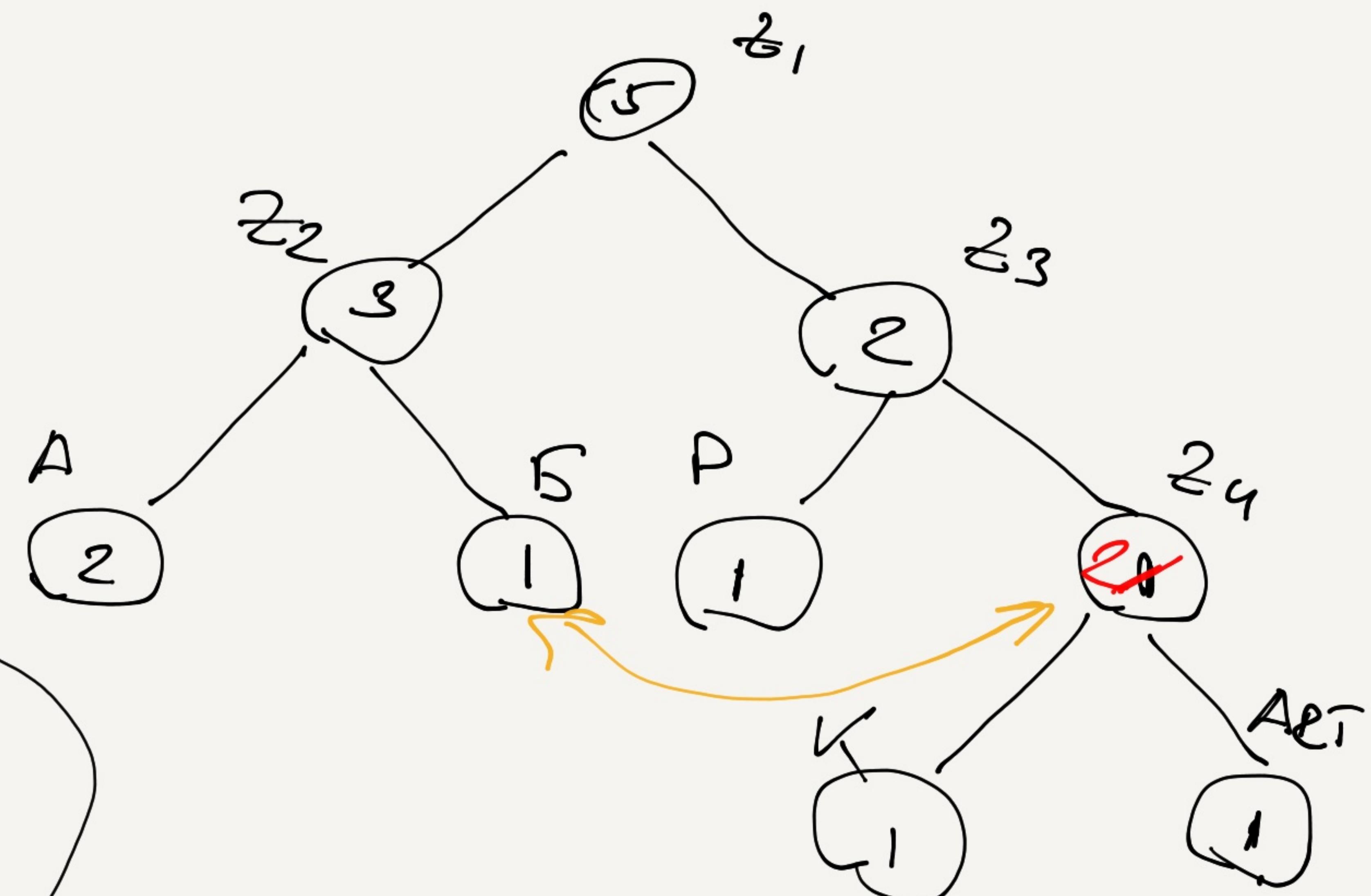


z_1	z_2	z_3	A	5	P	z_4	K	AET
5	3	2	2	1	1	1	2	1

0 1 2 3 4 5 6 7 8

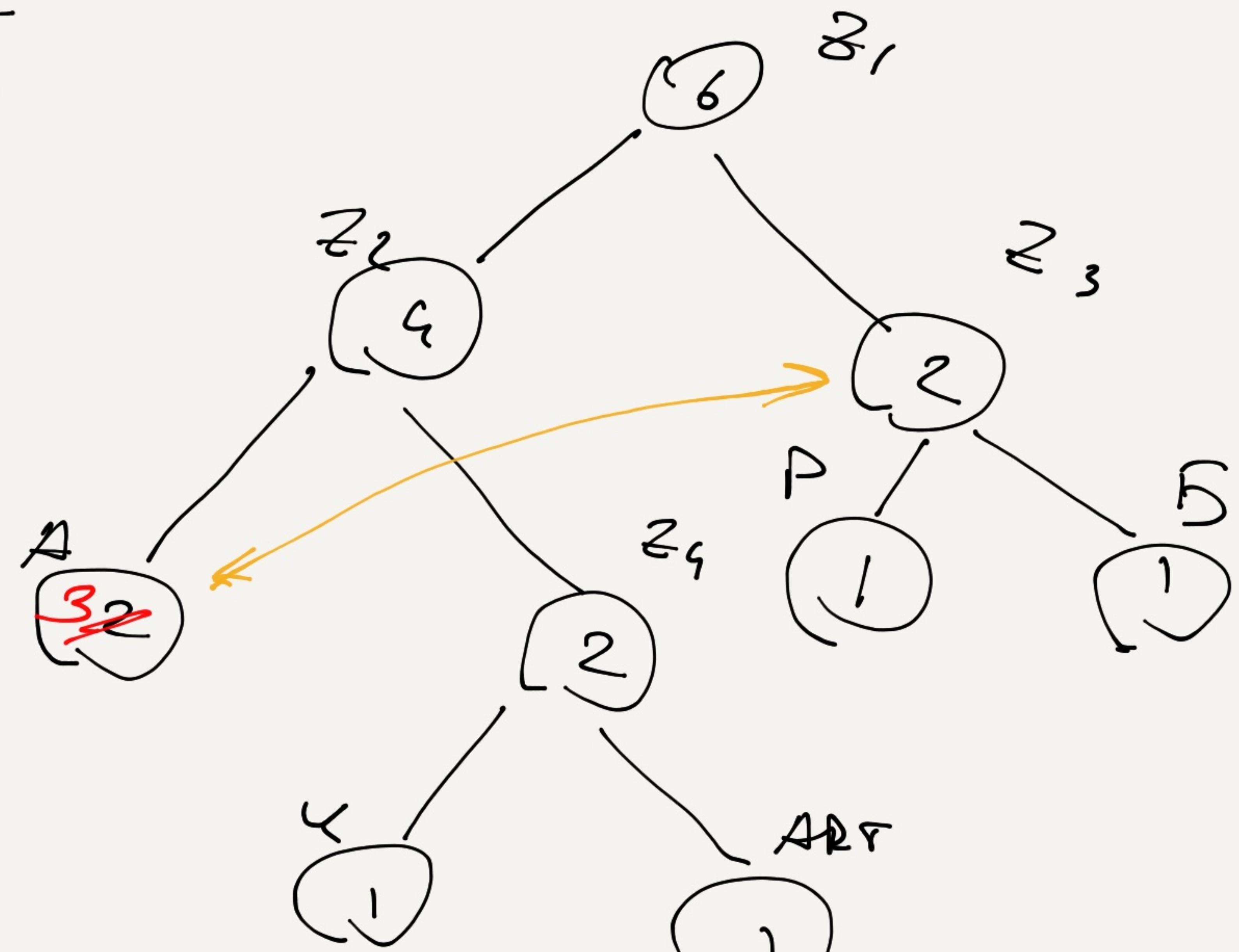
z_1	z_2	z_3	A	z_4	P	B	K	AET
6	5	3	4	2	2	1	1	1

0 1 2 3 4 5 6 7 8



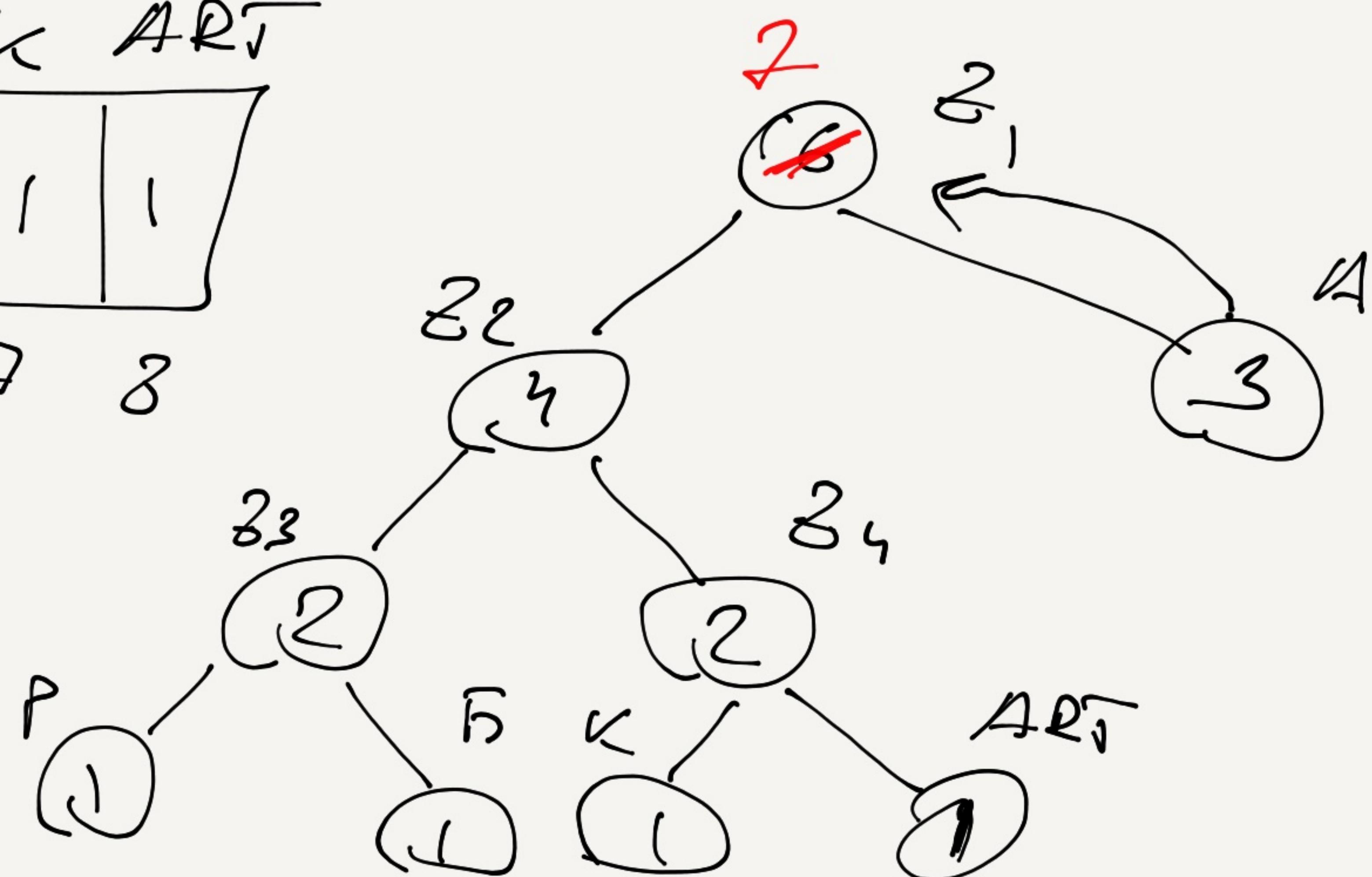
Z_1	Z_2	Z_3	A	Z_4	P	B	K	ART
6	4	2	3 2	2	1	1	1	1

0 1 2 3 4 5 6 7 8
00

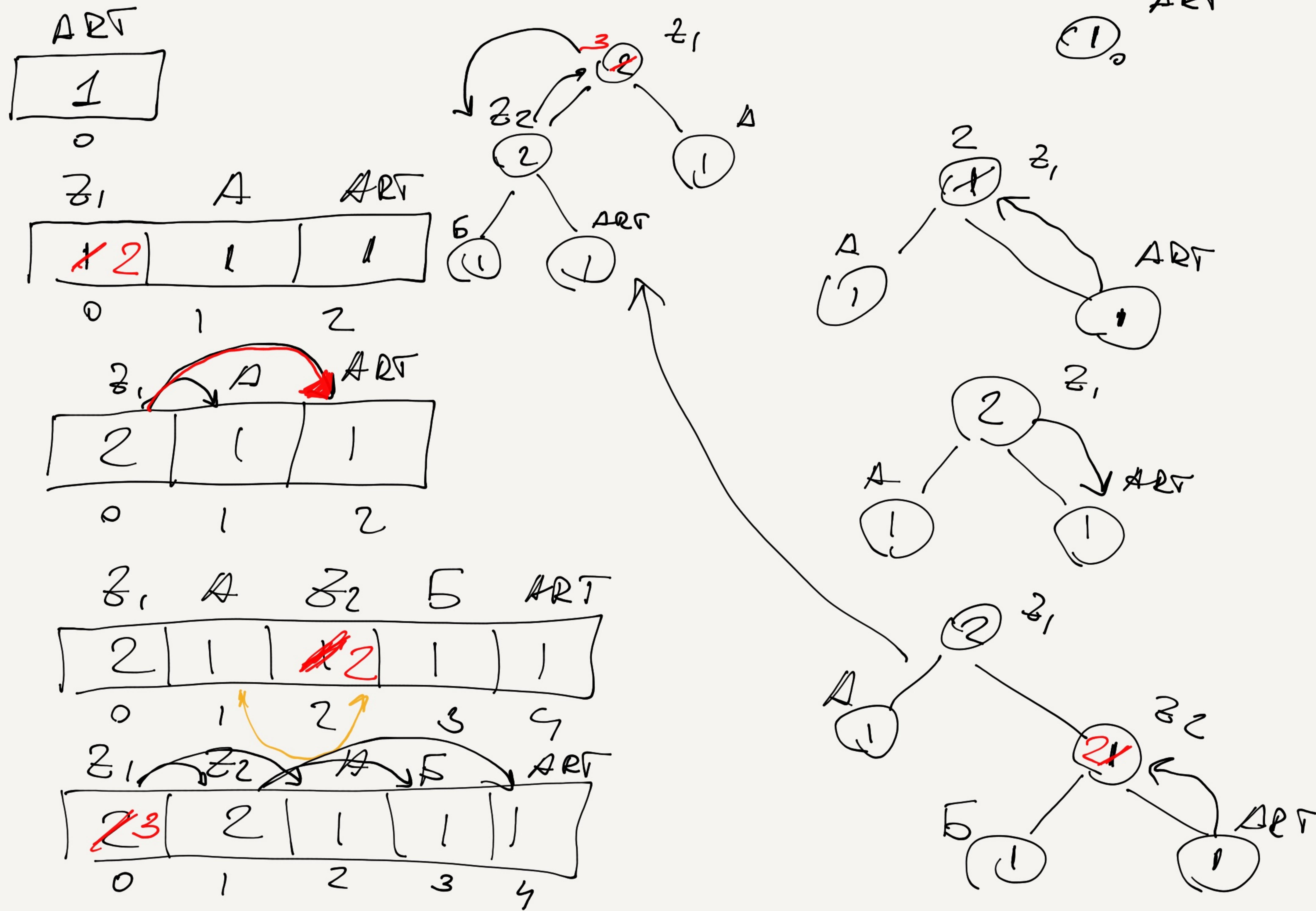


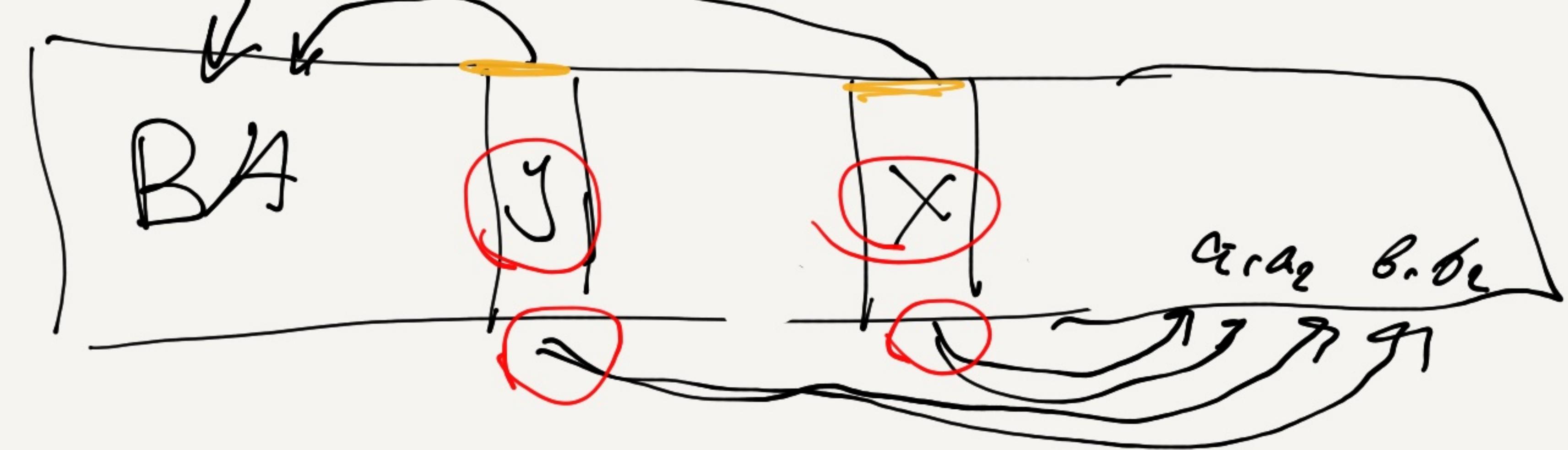
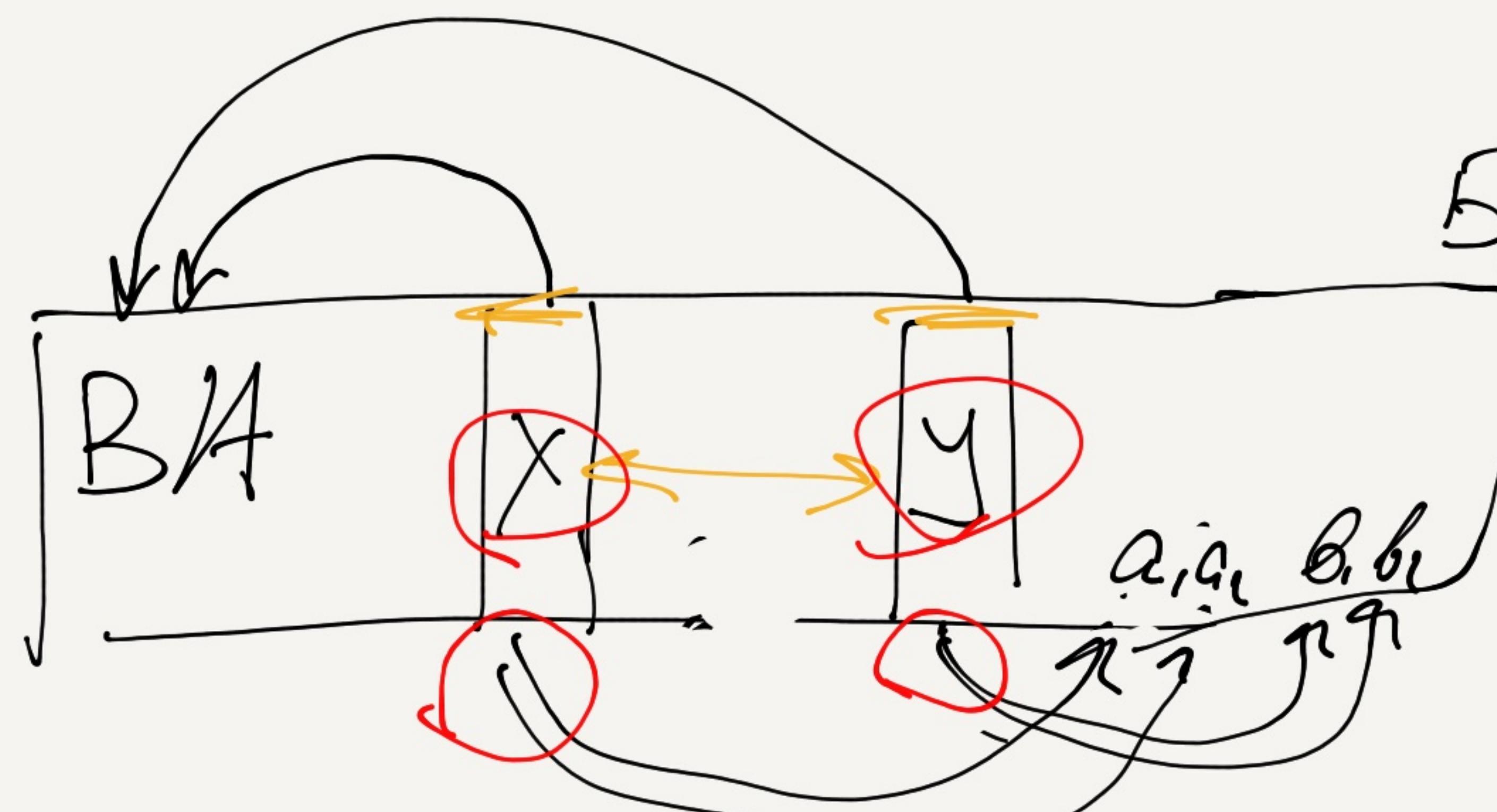
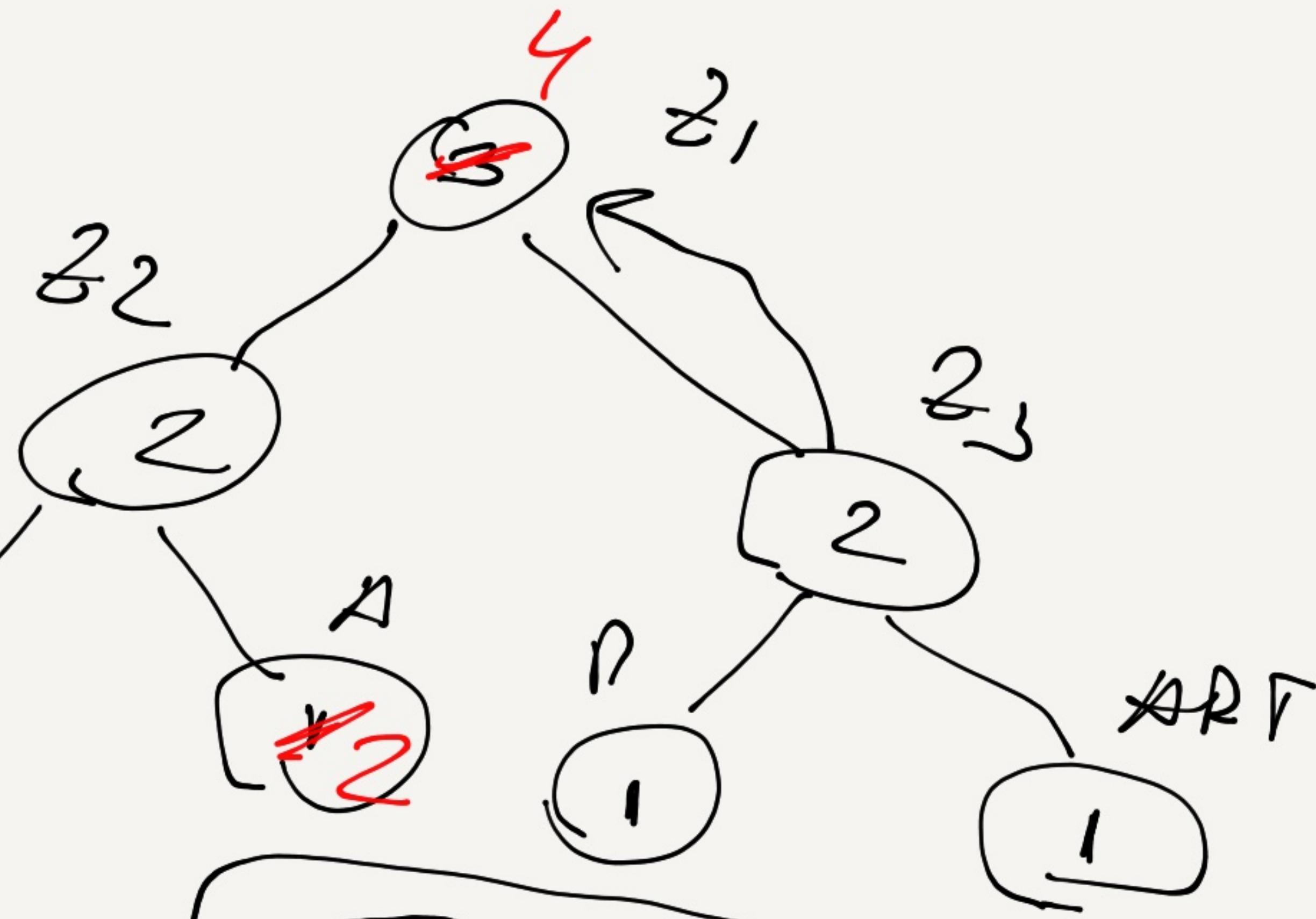
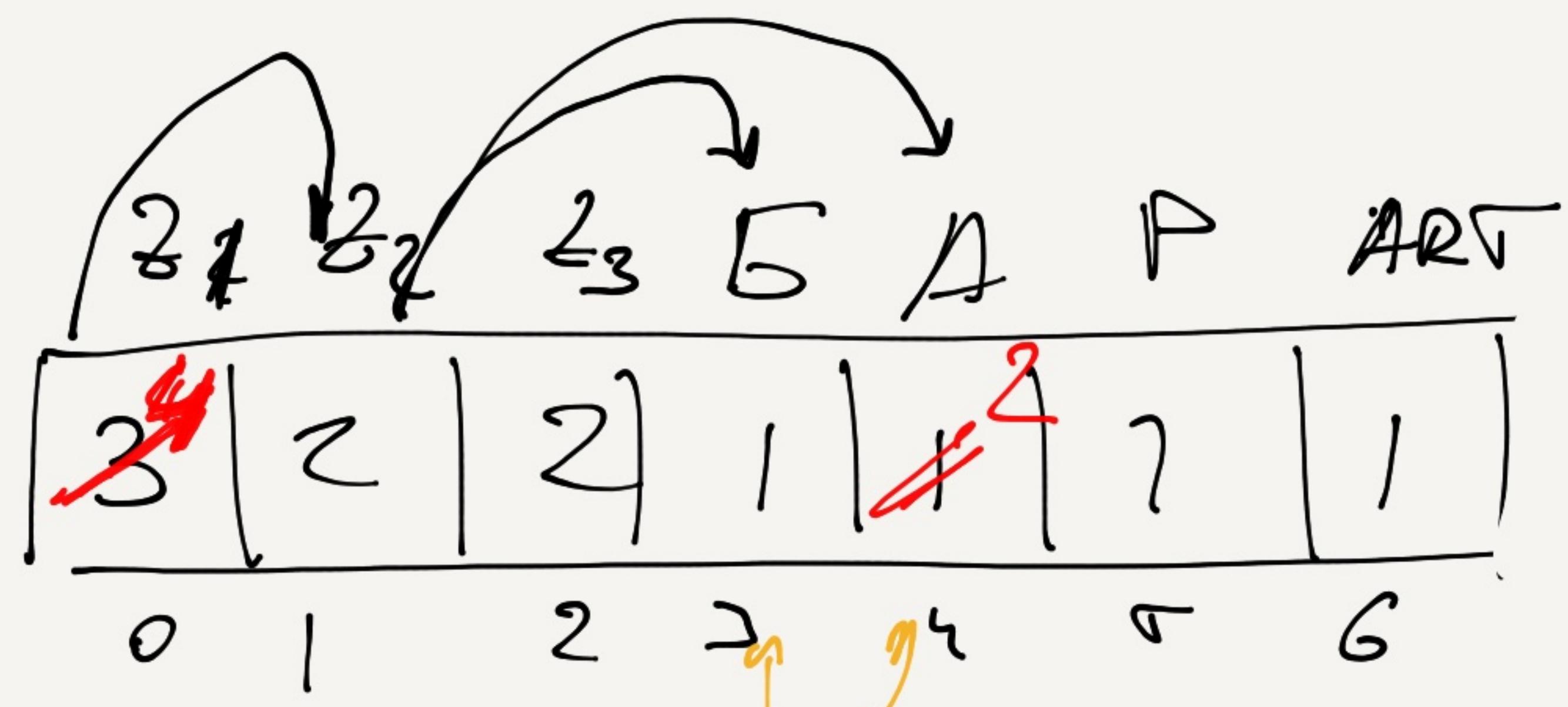
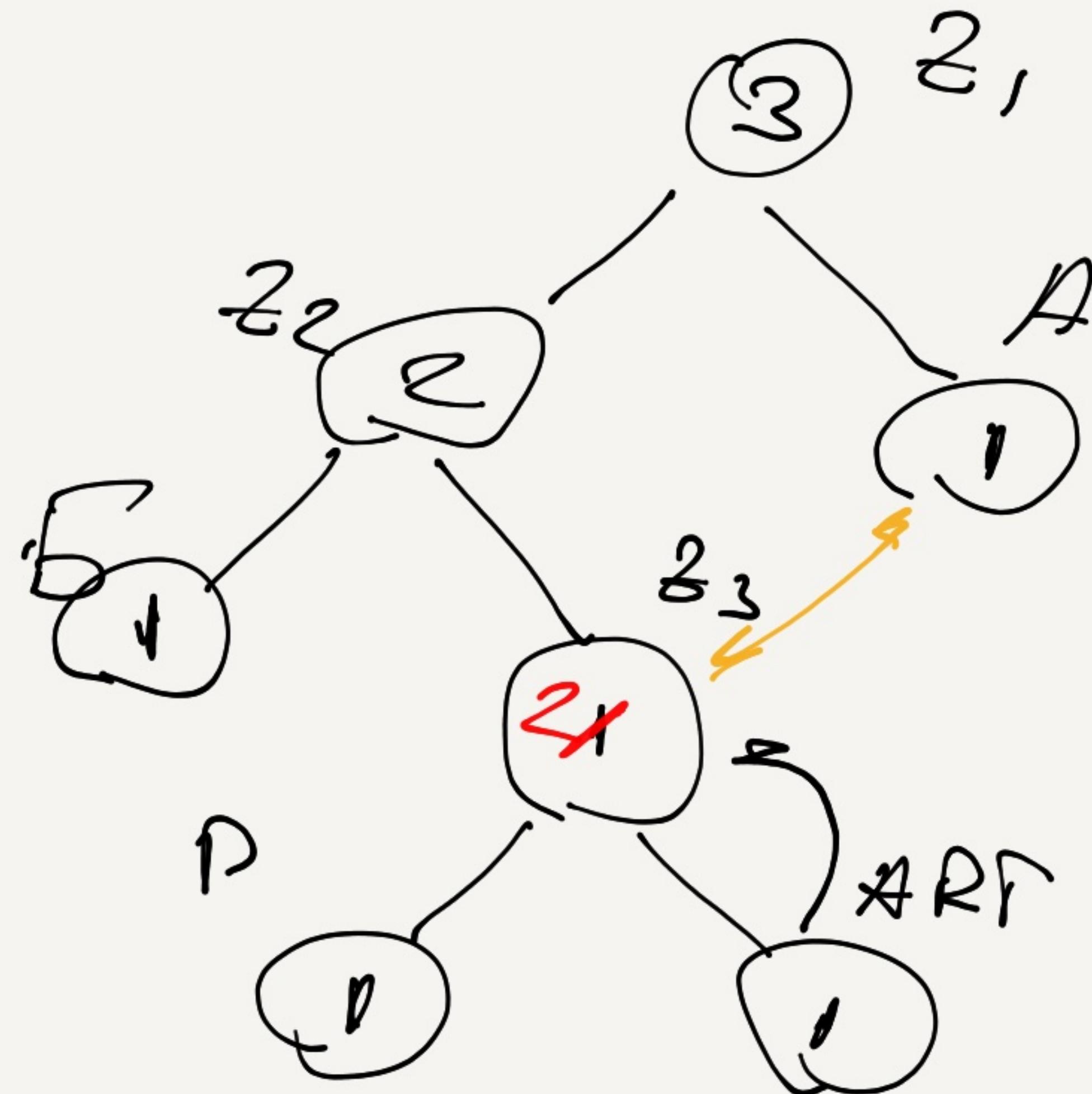
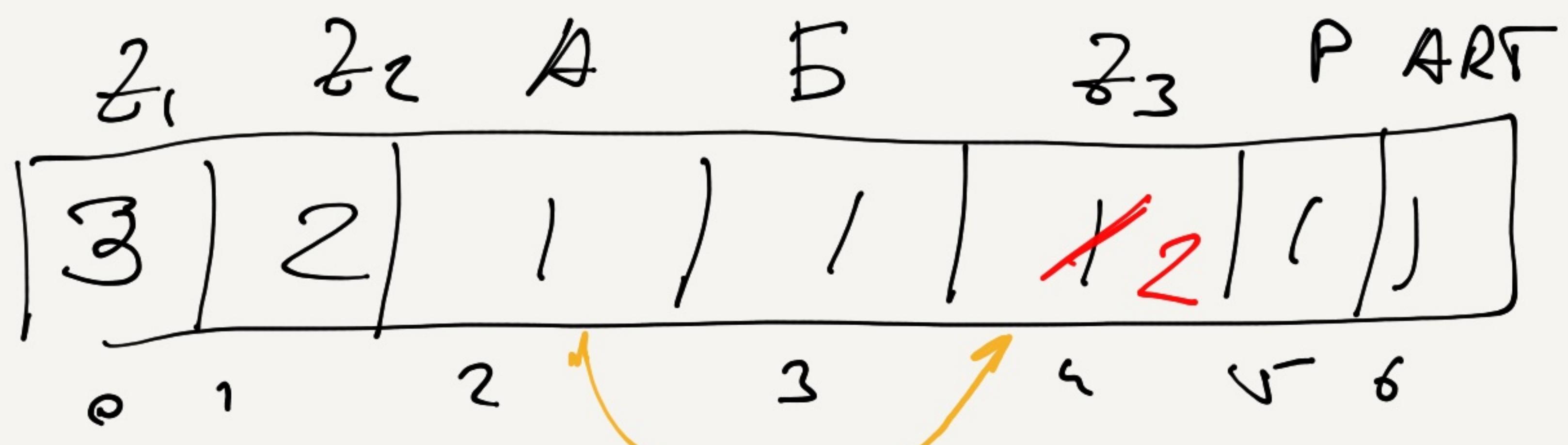
Z_1	Z_2	A	Z_3	Z_4	P	B	K	ART
2 6	4	3	2	2	1	1	1	1

0 1 2 3 4 5 6 7 8



A 1501 P 01 11400 → ADPA





X	a_1/a_2	Y	b_1/b_2
-----	-----------	-----	-----------

$$X = a_1 + a_2$$

$$Y = b_1 + b_2$$

$$X \geq a_1 = a_2 \geq Y \geq b_1 = b_2.$$

$$Y > X$$

$$Y \geq a_1, a_2 \geq X \geq b_1, b_2.$$

Канонические коды Хаффмана

1. Длины кодов?

2. Код. ✓

$$a_1 \leq a_2 \leq a_3 \leq a_4 \leq a_5 \leq a_6 \leq a_7 \leq a_8 \quad \leftarrow$$

$$\begin{array}{ccccccc} 2 & 5 & 5 & 3 & 5 & 2 & 2 & 5 \\ \hline & - & - & - & - & & & \end{array}$$

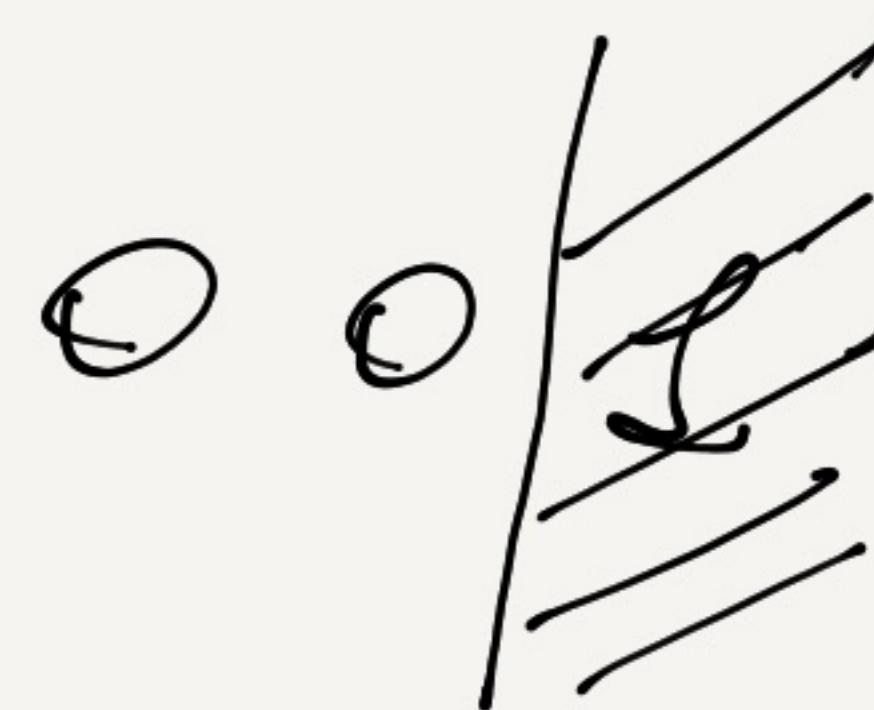
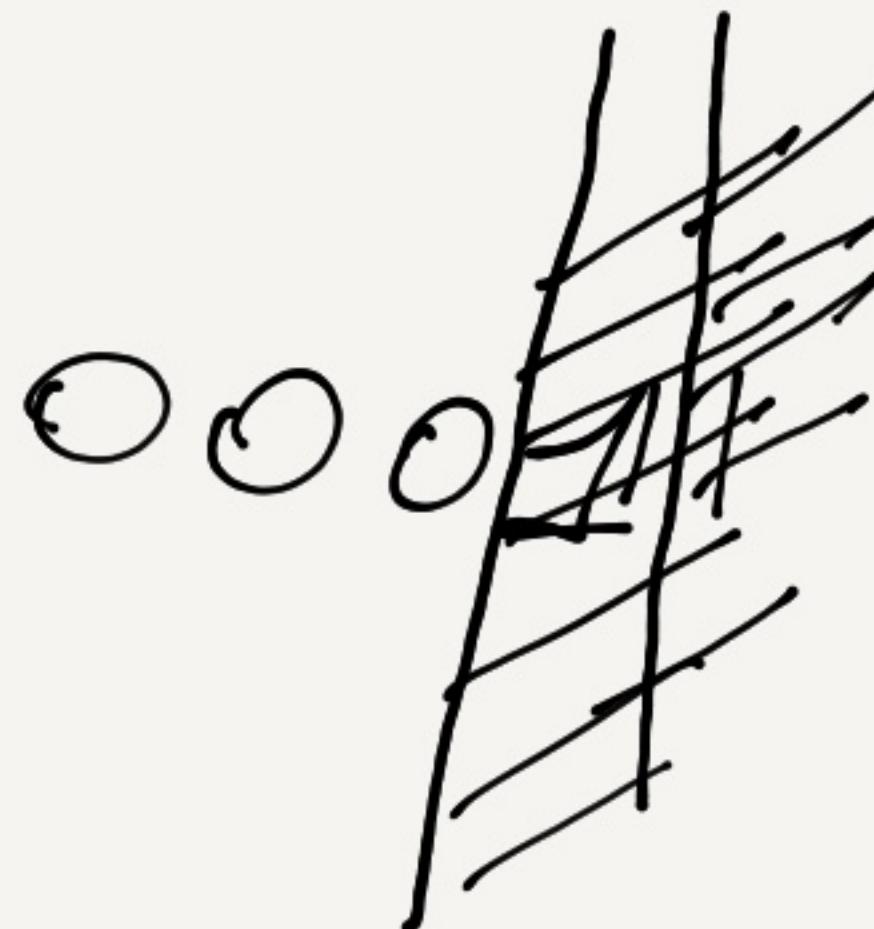
	a_2	0 0 0 0 0
5	a_3	0 0 0 0 1
	a_4	0 0 0 1 0
	a_8	0 0 0 1 1

3	a_5	0 0 1
---	-------	-------

2	a_6	0 1
---	-------	-----

1	a_7	1 1
---	-------	-----

$a_5 a_5 a_4 a_6 a_3 a_6 a_7$



$\xrightarrow{0 0 0 1 0 0 0 0 1 0 0 0 1 1 0 0 0 0 1 0 0 1 1}$

$a_5 \quad a_5 \quad a_4 \quad a_6 \quad a_3 \quad a_6 \quad a_7$

АБРА ИЗД АБРА

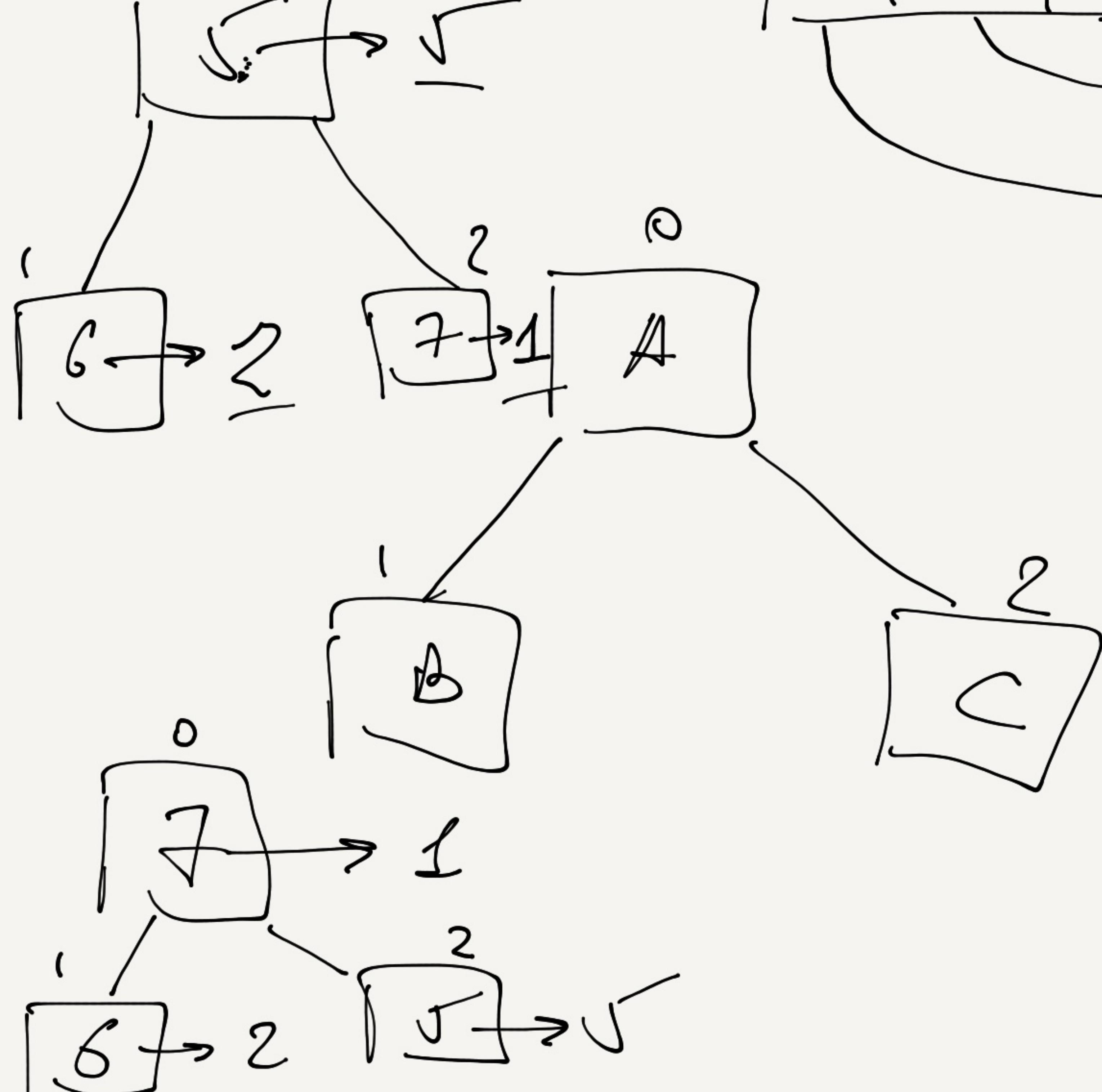
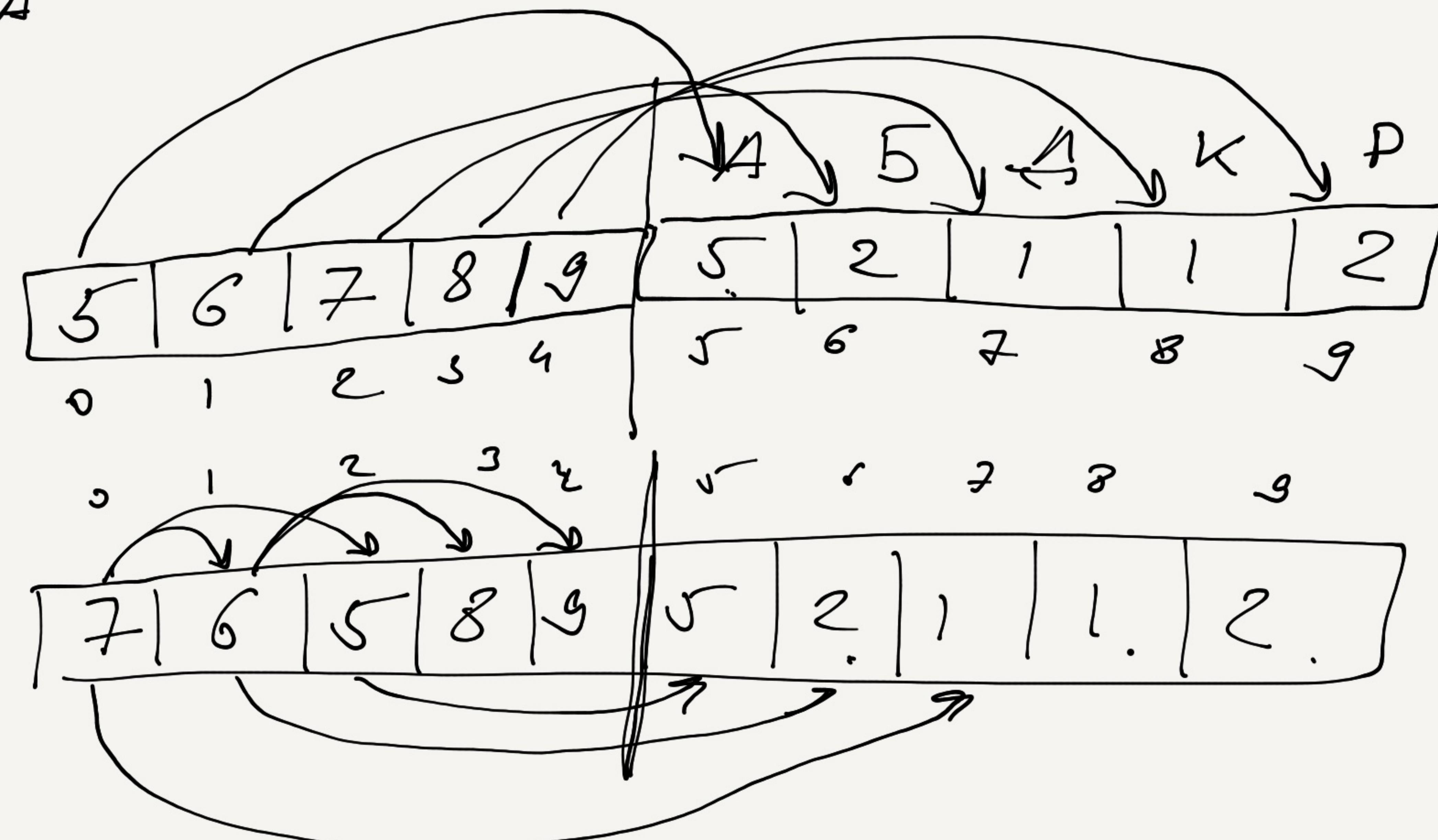
A - 5

B - 2

P - 2

K - 1

1 - 1



$$A \leq B$$

$$A \leq C$$

$$a_0 \leq a_{z_i+1},$$

$$a_i \leq a_{z_{i+2}}.$$

$$a_i \rightarrow a[\Sigma a_i]$$

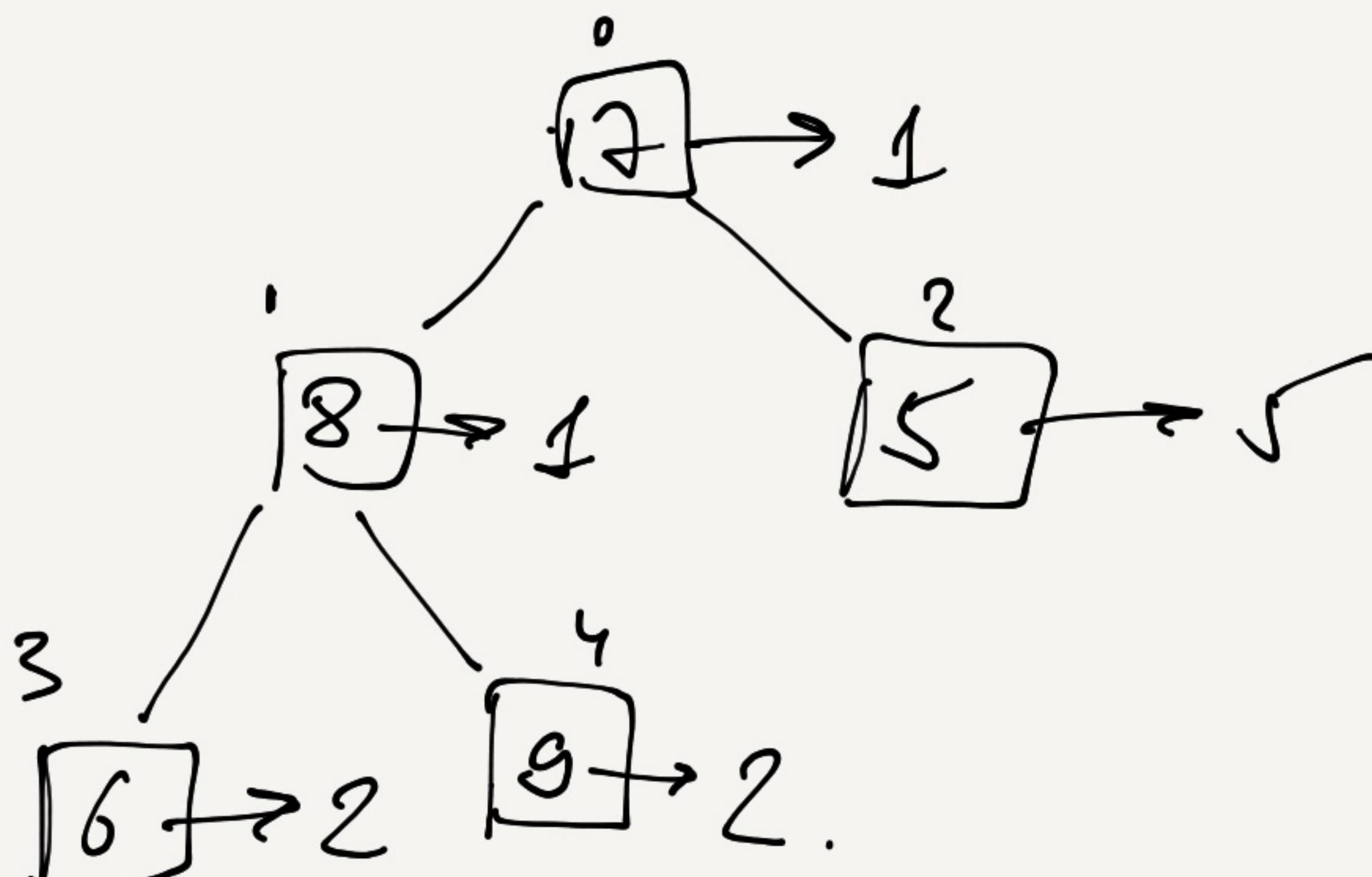
$$a[\Sigma a_{z_{i+1}}]$$

$$a[\alpha_{z_{i+2}}]$$

2	1	8		5		6)	9		5		2		1		1		2
0	1	2	3	4	5	6	7	8	9	5	6	7	8	9	5	6	7	8

7 - A
8 - K

A		B		C		K		P
n	n+1	n+2	n+3	n+4	n+5	n+6	n+7	n+8



9		8		5		6)	9		5		2		1		1		2
0	1	2	3	4	5	6	7	8	9	5	6	7	8	9	5	6	7	8

8		9		5		6)	9		5		2		1		1		2
0	1	2	3	4	5	6	7	8	9	5	6	7	8	9	5	6	7	8

4		9		5		6		2		5		2		4		5		2
0	1	2	3	4	5	6	7	8	9	5	6	7	8	9	5	6	7	8

2, 1
A, K
L, S

A hand-drawn diagram illustrating a mapping between two sets of intervals. The left set of intervals is $\{[2, 3], [3, 4], [4, 5], [5, 6], [6, 7], [7, 8], [8, 9]\}$. The right set of intervals is $\{[0, 1], [1, 2], [2, 3], [3, 4], [4, 5], [5, 6], [6, 7], [7, 8], [8, 9]\}$. An arrow points from the left set to the right set. Labels 'Sek. A' and 'B' are placed above the first two intervals of the right set, and labels 'a' through 'h' are placed below them. The label 'P' is at the end of the right set.

$$\frac{4}{6} = \frac{2}{3} \text{ m. } 31$$

A hand-drawn graph on a Cartesian coordinate system. The horizontal axis (x-axis) has tick marks from 0 to 9. The vertical axis (y-axis) has tick marks from 0 to 6. Two curves are plotted: one starting at (0,0), peaking at (1,3), dipping at (2,1), and reaching (3,6); and another starting at (0,0), peaking at (1,1), dipping at (2,0), and reaching (3,3). They intersect at the point (1, 1.5).

A hand-drawn graph showing two overlapping normal distribution curves. The x-axis is labeled from 0 to 9. The left curve has a peak at 3 and is labeled '3 | 9 | 5'. The right curve has a peak at 6 and is labeled '6 | 3 | 0'. A bracket above the curves indicates they overlap between x=3 and x=6.

$$3 \boxed{2} \sqrt{4} \left(3 \boxed{1} \sqrt{3} \boxed{4} \right) 4 \boxed{1} 2$$

Annealed							
Annealed		Annealed		Annealed		Annealed	
Annealed		Annealed		Annealed		Annealed	
g	3	15	4	3	5	3	4
0	1	2	3	4	5	6	7

— P

5	3	15	4	3	5	3	4	2
0	1	2	3	4	5	6	7	8

3	5	15	4	3	5	3	4	4	2
0	1	2	3	4	5	6	7	8	9

3 — (1PK) + 5

5	2	16	2	3	5	3	4	4	2
0	1	2	3	4	5	6	7	8	9

	A	5	4	K	P
1	2	6	2	3	5

.0 1 2 3 4 5 6 7 8 9

A - 5
1

Z
1

1	11	1	2	3	1	3	4	4	2
0	1	2	3	4	5	6	7	8	9

1 Σ letters
(Text)

$\leq |\Sigma|$

1 Σ

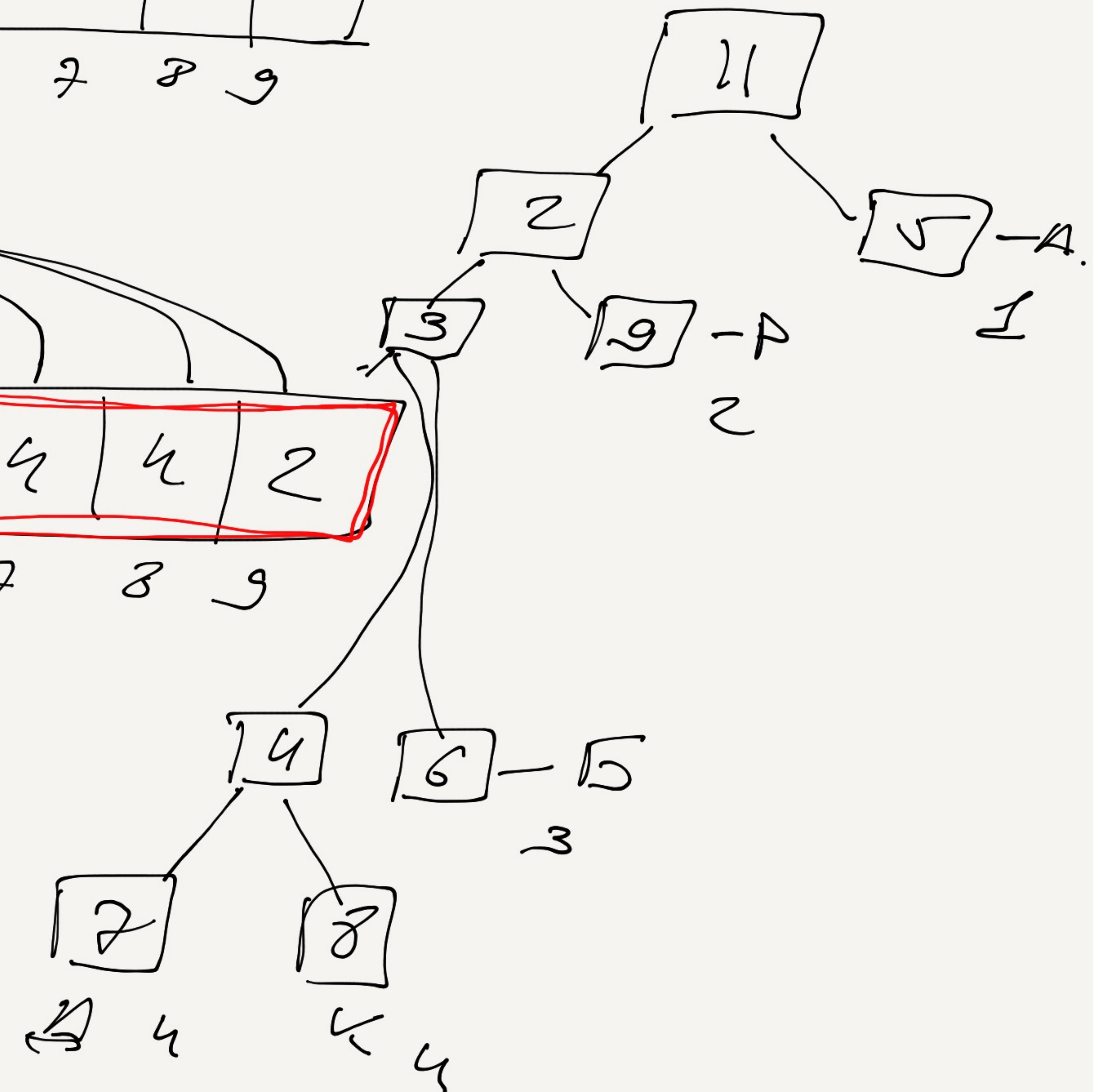
A - 1

5 - 3

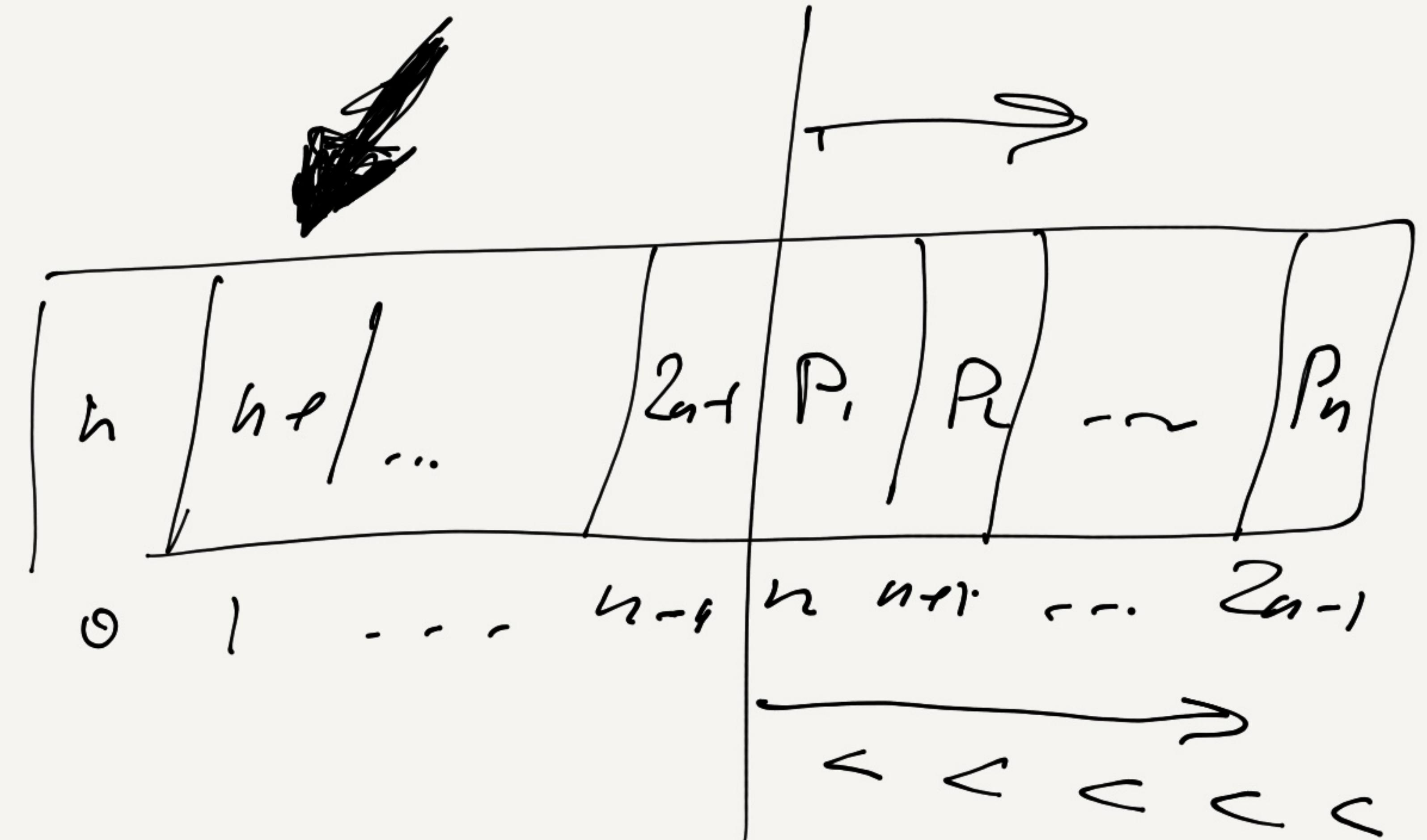
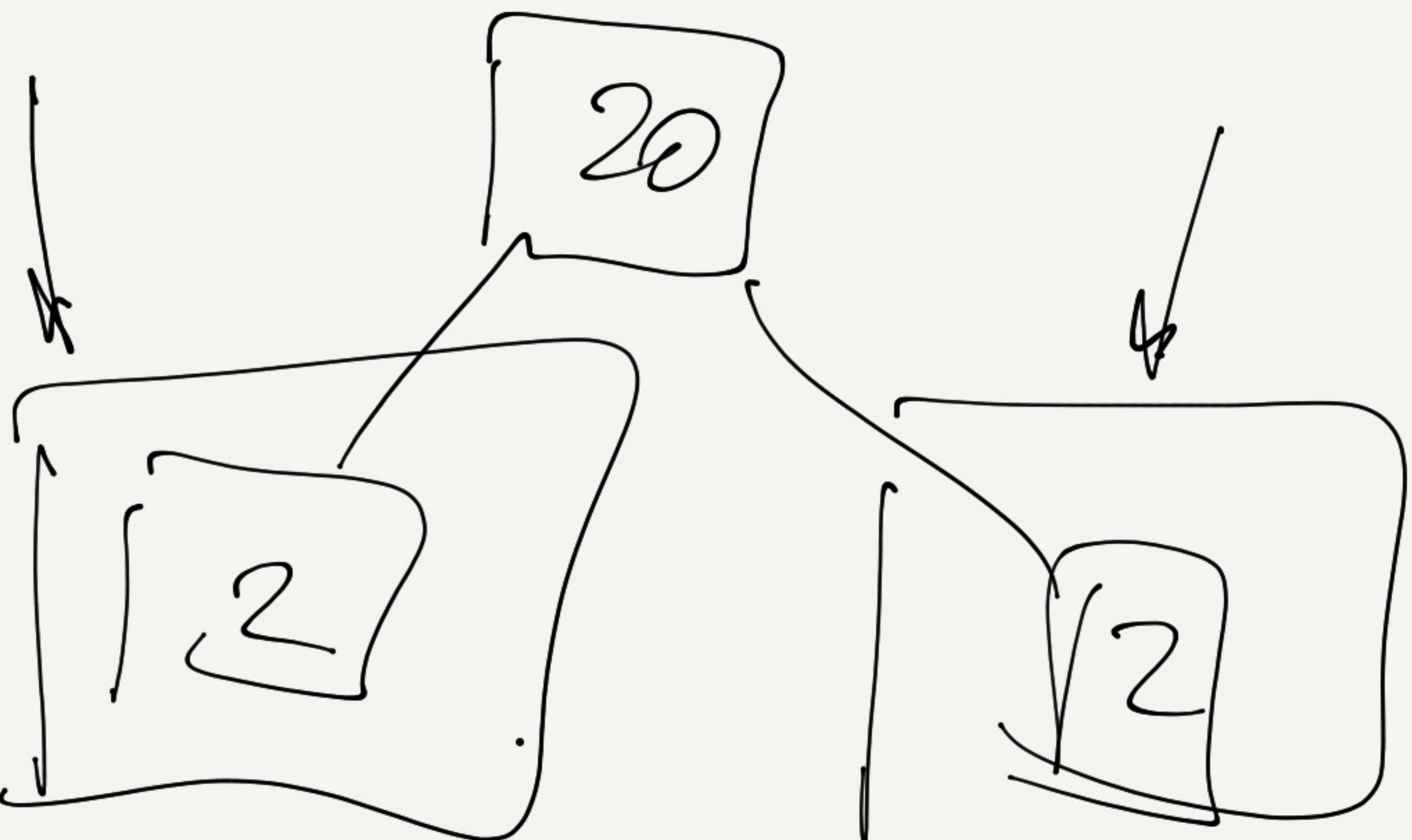
1 - 4

K - 4

P - 2



$4 \left\{ \begin{matrix} \Delta \\ K \end{matrix} \right. \quad 0000$
 $000)$
 $3 \left\{ \begin{matrix} \Sigma \\ 001 \end{matrix} \right.$
 $2 \left\{ \begin{matrix} P \\ 01 \end{matrix} \right.$
 $1 \left\{ \begin{matrix} A \\ 1 \end{matrix} \right.$



$|a_i|$

$\sum_i |a_i|$

$$f_i \left[\begin{array}{c} \wedge \\ \wedge \\ \wedge \end{array} \right]$$

$$f_j \left[\begin{array}{c} \wedge \\ \wedge \\ \wedge \end{array} \right]$$