Übung 5

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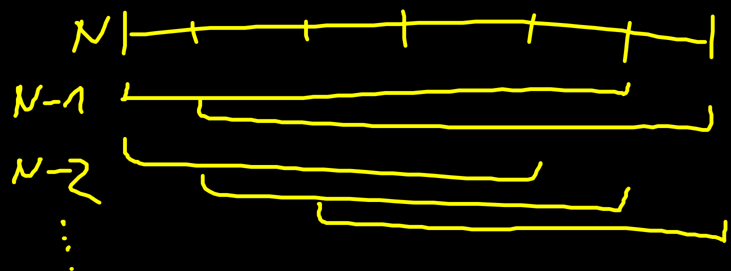
$$A'_N = \{(1,N-1),(2,N),(3,N-2),(4,N-3),\dots,(N,1)\}$$

$$P = \{0,1,2,\dots,N\}$$

$$A_N = \{(1,N),\dots,(N,1)\}$$



a_n = # innere Knoten im Aufrufbaum auf A'_n

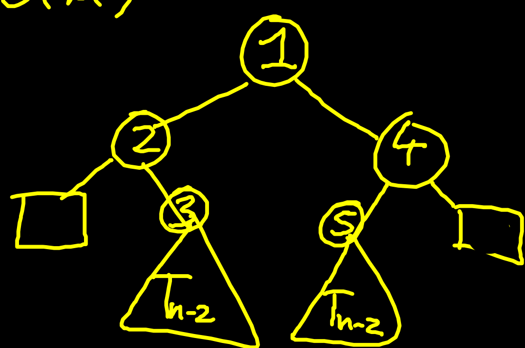
$$a_n = \left(\tfrac{1}{4}b_n + \tfrac{3}{4}\right)2^{\lceil \frac{n}{2} \rceil} - 3$$

$$b_n = 5 - 2(n \bmod 2)$$

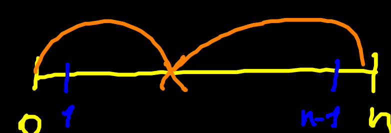
$a_3 = 3$

$a_4 = 5$ $\rightsquigarrow$ $a_n = \Theta(\sqrt{2}^n)$

$a_n = 2a_{n-2} + 3 \quad (n \geq 5)$



Schritt	X	A
1	$\{0,n\}$	$A'_n \setminus \{[n,1]\}$
2	$\{0,n-1,n\}$	$\{[1,n-2],[2,n],\dots,[n-1,1]\}$
3	$\{0,\underbrace{1,n-1}_{},n\}$	$\{[1,n-3],[2,n],\dots,[n-2,1]\} = A'$



$$A'_{n-2} = \{[1,n-3],[2,n-2],\dots,[n-2,1]\}$$

In A' sind Distanzen von 0 zu k und k zu n für $k \in [2..n-2]$

d.h. $A'_{n-2} = A' \setminus \{[k,2] : k \in [2,..,n-3]\}$

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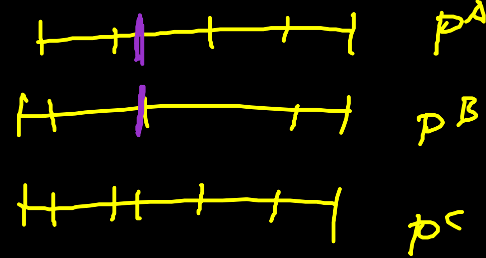
A = distances



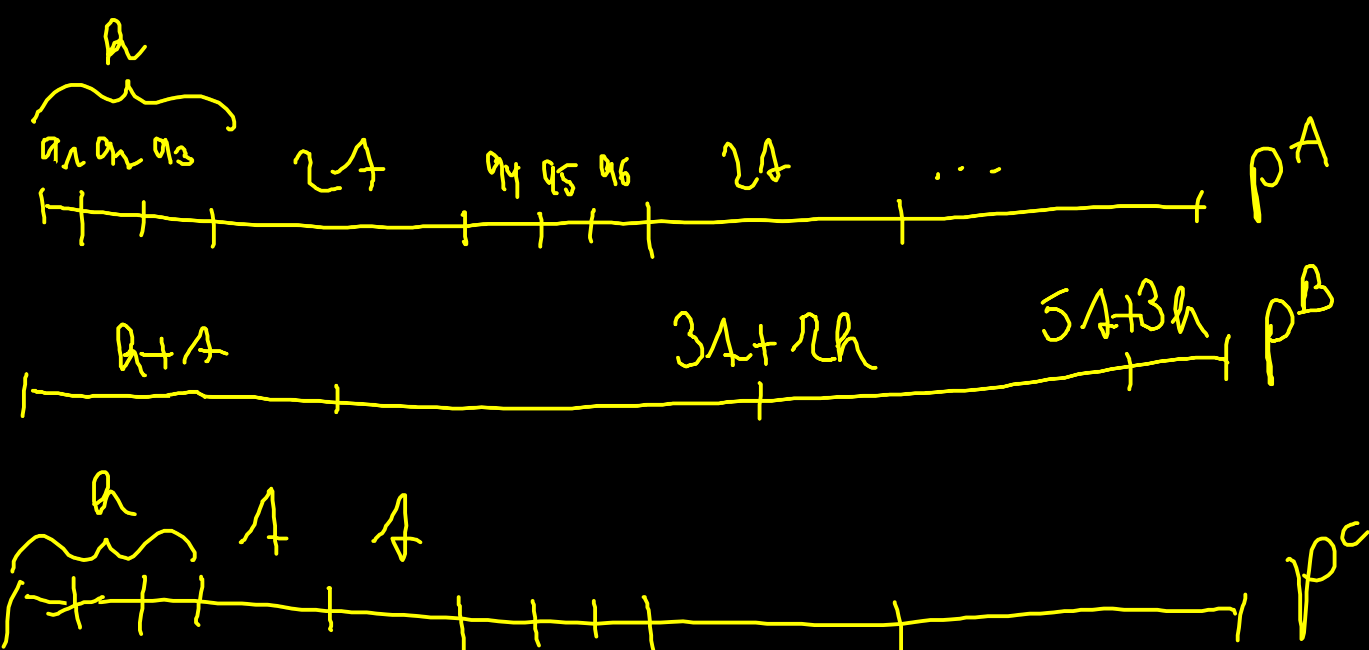
B = ⋮

C = ⋮

3-Partition $\quad q_1, \dots, q_{3n} \in \mathbb{N} \quad h = \frac{\sum q_i}{n} \quad S = n \cdot h$

$q_i \in (B/4, B/2) \quad A = (n+1) \cdot S$

a_i



$p^B \subseteq \{ i \cdot h + j \cdot A \}$

$p^B \subseteq p^C \Rightarrow$ als Summe von A, q_i darstellbar