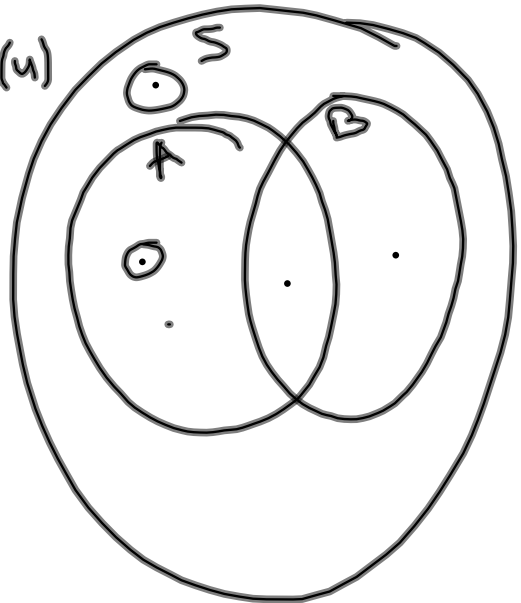
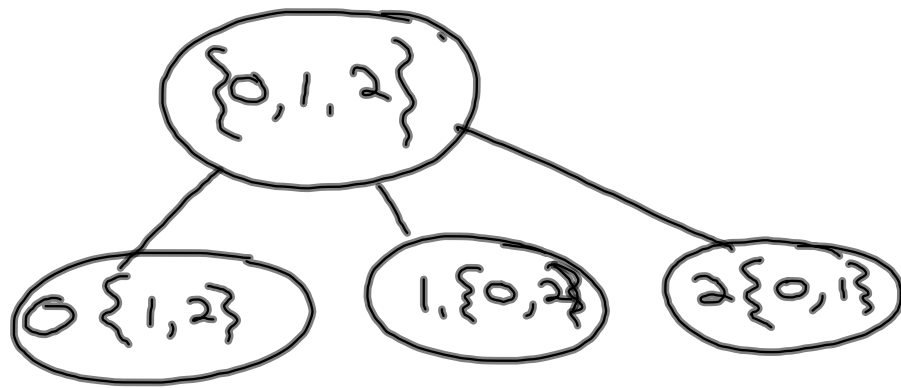


7.1 #34

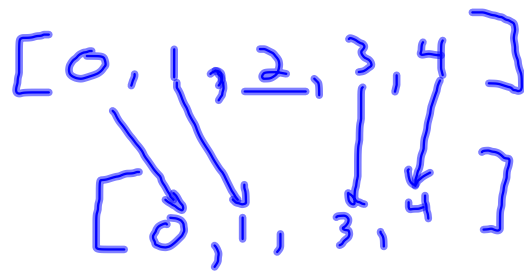
$$\chi_A(u) = \begin{cases} 1 & \text{if } u \in A \\ 0 & \text{if } u \notin A \end{cases}$$

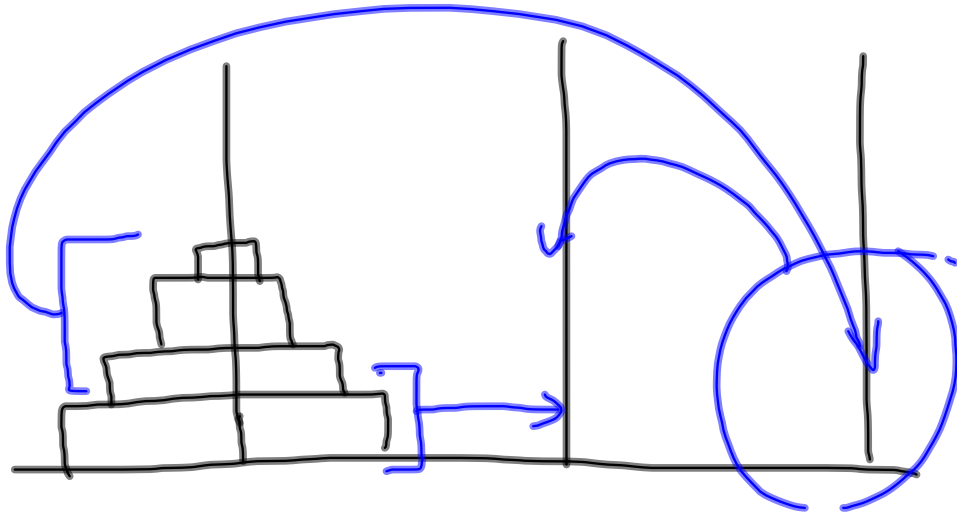
	$\chi_A(u)$	$\chi_B(u)$	$\chi_{A \cap B}(u)$
$u \notin A$ $u \notin B$	0	0	0
<hr/>			
$u \in A$ $u \notin B$			





$$\begin{array}{c}
 \begin{matrix} 0 & 1 & 2 \\ [0, 1, 2] \end{matrix} \\
 i=1 \\
 \text{Perm}(1, [0, 2])
 \end{array}$$





m_n : number of moves to
move a stack of n disks

$$\begin{aligned} m_n &= m_{n-1} + 1 + m_{n-1} \\ &= 2 \cdot m_{n-1} + 1 \quad n \geq 2 \end{aligned}$$

$$m_1 = 1$$

$S_{n,r}$: number of ways
to partition a set of n
elements into r subsets.

$$A = \{1, 2, 3, 4\}$$

$$S_{4,1} = 1 \quad \{1, 2, 3, 4\}$$

$$S_{4,4} = 1 \quad \{1\}, \{2\}, \{3\}, \{4\}$$

$$S_{4,2} = 7$$

$\{1\}, \{2, 3, 4\}$
$\{2\}, \{1, 3, 4\}$
$\{3\}, \{1, 2, 4\}$
$\{4\}, \{1, 2, 3\}$
$\{1, 2\}, \{3, 4\}$
$\{1, 3\}, \{2, 4\}$
$\{1, 4\}, \{2, 3\}$

$$S_{n,r} = S_{n-1,r-1} + S_{n-1,r}$$

$$S_{4,2} = S_{3,1} + S_{3,2}$$

