2.

$f(S) = S \setminus \{A_1\} = \{A_{i_1}, A_{i_2}, \dots, A_{i_k}\}$

1-1:

$B_1, B_2 \in \mathcal{B}$

Ако је $B_1 = B_2$, онда је $\{A_1\} \cup B_1 = \{A_1\} \cup B_2$

На: $B \in \mathcal{B}$ Пронашао $A \in \mathcal{A}$ т.ш.

$f(A) = B$

$f(A) = A \setminus \{A_1\}$

$\Rightarrow A = B \cup \{A_1\}$

3.

$$f(b_i)=\begin{cases} 9-b_i, & i=1,2,3 \\ b_i, & i=4,5,6 \end{cases}$$

$$A=\{a_1,\dots a_6 \mid \sum a_i=27\} \qquad f: B \to A$$

$$B=\{b_1 b_2 \dots b_6 \mid b_1+b_2+b_3=b_4+b_5+b_6\}$$

1-1:

$$f(b_1)f(b_2)f(b_3)f(b_4)f(b_5)f(b_6)=f(b_{21})f(b_{22})f(b_{23})f(b_{24})f(b_{25})f(b_{26})$$

$$(9-b_{11})(9-b_{12})(9-b_{13})b_{14}b_{15}b_{16}=(9-b_{21})(9-b_{22})(9-b_{23})b_{24}b_{25}b_{26}$$

$$9-b_{1i}=9-b_{2i} \quad i=1,2,3 \Rightarrow b_{1i}=b_{2i} \quad i=1,2,3$$

$$b_{1j}=b_{2j} \quad j=4,5,6$$

$$b_{11}b_{12}b_{13}b_{14}b_{15}b_{16}=b_{21}b_{22}b_{23}b_{24}b_{25}b_{26}$$

НО:

$a_1a_2\dots a_6 \in A$ Докажем, что $\exists\, b_1b_2\dots b_6 \in B$ т.ч. $f(b_i)=a_i$

$$f(b_i)=\begin{cases} 9-b_i, & i=1,2,3 \\ b_i, & i=4,5,6 \end{cases}$$

$b_1=9-a_1$ $\quad b_4=a_4$

$b_2=9-a_2$ $\quad b_5=a_5$

$b_3=9-a_3$ $\quad b_6=a_6$

$x_n = (n-1)(x_{n-1} + x_{n-2}),$

u.t. $x_k = k!$

$x_{n+1} = n \cdot (x_n + x_{n-1}) = n \cdot (n! + (n-1)!) = n \cdot (n \cdot (n-1)! + (n-1)!) =$

$n \cdot (n-1)! (n+1) = (n+1) \cdot n (n-1)! = (n+1)!$

$k! = k \cdot (k-1)! = k \cdot (k-1)(k-2)! = \dots$