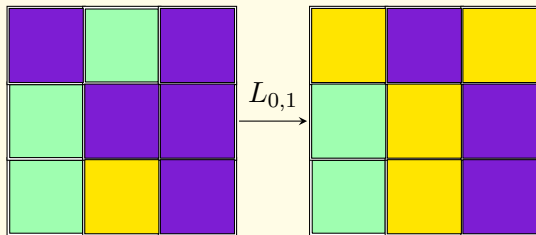
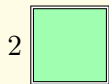
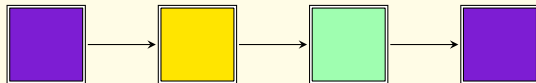


# Lights Out



$$P \xrightarrow{L_{0,1}} L_{0,1}(P)$$



$$P = (0, 2, 0, 2, 0, 0, 2, 1, 0)$$

$$L_{0,1}(P) = (1, 0, 1, 0, 1, 1, 2, 1, 0)$$

## Résolution du Jeu

$$\mathcal{L} \times a = \mathcal{L}(3,3) = \begin{pmatrix} 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 1 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 & 0 \\ 1 & 0 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\ 0 & 1 & 0 & 1 & 1 & 1 & 0 & 1 & 0 \\ 0 & 0 & 1 & 0 & 1 & 1 & 0 & 0 & 1 \\ 0 & 0 & 0 & 1 & 0 & 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 1 \end{pmatrix} \times a = b$$
  
$$b = \begin{pmatrix} 0 \\ 2 \\ 0 \\ 2 \\ 0 \\ 0 \\ 0 \\ 2 \\ 1 \\ 0 \end{pmatrix} \xrightarrow{\hspace{10em}} a = \begin{pmatrix} 2 \\ 0 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 0 \\ 2 \end{pmatrix}$$