



x_1	x_4	x_7
x_2	x_5	x_8
x_3	x_6	x_9

Black 1
White 0



$\in \mathbb{R}^9$

$$\left\{ x \in [0,1]^9 \mid x_8 = \frac{1}{2} \right\} =: H_8\left(\frac{1}{2}\right)$$

separates $\{0\}$ from $\{1,2\}$

$$H_7\left(\frac{1}{2}\right) \text{ separates } \{2\} \text{ from } \{0,1\}.$$

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$$\begin{pmatrix} x_5 \\ x_7 \\ x_8 \end{pmatrix} \in \mathbb{R}^3$$

$$\phi[\{0\}] = \begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix}$$

$$\phi[\{1\}] = \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}$$

$$\phi[\{2\}] = \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix}$$

