



$$\overleftarrow{\nabla} 1 = 0 \Rightarrow \bigvee_1^1 \left\{ \begin{array}{l} \overleftarrow{1} = 0 \\ \overleftarrow{1} = \overleftarrow{1} \end{array} \right.$$

$$\overleftarrow{\nabla} 1 = \overleftarrow{\nabla} 1 = 0 \Rightarrow_{\text{mex}} \bigvee_1^1 \overleftarrow{1} = \overleftarrow{1} \Rightarrow \overleftarrow{1} = \overleftarrow{1} = \overleftarrow{1} = 0 \Rightarrow_{\text{rex}} \overleftarrow{1} = 0$$

$$\nabla - \nabla = \overleftarrow{\nabla} \left\{ \begin{array}{l} \nabla = \nabla \nabla \quad \nabla = \nabla \nabla \\ \nabla = \nabla \nabla \quad \nabla = \nabla \nabla \end{array} \right. \Rightarrow \nabla - \nabla = \overleftarrow{1}$$

$$\nabla - \nabla = \overleftarrow{\nabla} \Rightarrow_{\text{lex}} \bigvee_1^1 \nabla = \nabla \nabla \Rightarrow \overleftarrow{\nabla} - \overleftarrow{\nabla} - \overleftarrow{1} = \nabla - \nabla - \overleftarrow{\nabla} = 0 \Rightarrow_{\text{mex}} \bigvee_1^1 \nabla - \nabla - \overleftarrow{1} = \nabla \nabla$$

$$\Rightarrow \overleftarrow{\nabla} - \overleftarrow{\nabla} - \overleftarrow{1} = \overleftarrow{\nabla} - \overleftarrow{\nabla} - \overleftarrow{1} = \overleftarrow{\nabla} - \overleftarrow{\nabla} - \overleftarrow{\nabla} - \overleftarrow{\nabla} - \overleftarrow{1} = \overleftarrow{1} = 0 \Rightarrow_{\text{rex}} \nabla - \nabla = \overleftarrow{1} \in \overleftarrow{1}$$

$$\left\{ \begin{array}{l} \overleftarrow{\nabla} 1 = 0 \\ \overleftarrow{1} = \nabla \nabla \end{array} \right. \Rightarrow \overleftarrow{\nabla} + \overleftarrow{\nabla} = \nabla + \overleftarrow{1}$$

$$\text{Im } \mathcal{L}_* \subset \text{Ker } \omega$$

$$\underline{1} = 0 = \mathcal{L}0 \Rightarrow \overrightarrow{\mathcal{L}\underline{1} + \underline{y}} = 0 + \underline{1}$$

$$\text{Ker } \omega \subset \text{Im } \mathcal{L}_*$$

$$\begin{cases} \overleftarrow{\mathcal{L}\underline{1}} = 0 \\ \underline{1} = \mathcal{L}\underline{1} \end{cases} \quad 0 = \overrightarrow{\mathcal{L}\underline{1} + \underline{y}} = \underline{1} + \underline{1} \Rightarrow \underline{1} \in \underline{1} \Rightarrow \underline{1} = \underline{1} \Rightarrow \overleftarrow{\underline{1} - \mathcal{L}\underline{1}} = \underline{1} - \mathcal{L}\underline{1} = \underline{1} - \mathcal{L}\underline{1} = 0$$

$$\Rightarrow \begin{cases} \underline{1} - \mathcal{L}\underline{1} \in \overleftarrow{\underline{1}} \\ \mathcal{L}(\underline{1} - \mathcal{L}\underline{1}) = \mathcal{L}\underline{1} - \underbrace{\mathcal{L}\mathcal{L}\underline{1}}_{=0} = \mathcal{L}\underline{1} \end{cases} \Rightarrow \overrightarrow{\mathcal{L}(\underline{1} - \mathcal{L}\underline{1}) + \underline{1}} = \mathcal{L}\underline{1} + \underline{1}$$

$$\text{Im } \omega \subset \text{Ker } \mathcal{L}_*$$

$$\begin{cases} \underline{1} = 0 \\ \mathcal{L}\underline{1} = \underline{1} \end{cases} \Rightarrow \mathcal{L}\overrightarrow{\mathcal{L}\underline{1} + \underline{y}} = \mathcal{L}(\underline{1} + \underline{1}) = \mathcal{L}\underline{1} + \underline{1} = \underline{1} + \underline{1} = 0 + \underline{1}$$

$$\text{Ker } \mathcal{L}_* \subset \text{Im } \omega$$

$$\begin{cases} \underline{1} = 0 \\ 0 = \mathcal{L}(\underline{1} + \underline{1}) = \mathcal{L}\underline{1} + \underline{1} \end{cases} \Rightarrow \mathcal{L}\underline{1} \in \underline{1} \Rightarrow \mathcal{L}\underline{1} = \underline{1} \Rightarrow \underline{1} + \underline{1} = \overrightarrow{\mathcal{L}\underline{1} + \underline{y}}$$