

4.4-22

$$i_a = \frac{\sqrt{3}}{2}$$

$$\left\{ \begin{array}{l} \frac{12 - v_1}{2} - 2\sqrt{3} = 0 \\ 2\sqrt{3} + \frac{\sqrt{3} - v_2}{2} - \frac{v_2}{2} = 0 \\ \frac{v_2 - v_3}{2} - \frac{v_3}{2} + 1 = 0 \end{array} \right.$$

$$\Rightarrow \begin{bmatrix} \frac{1}{2} & 0 & 2 \\ 0 & 1 & -\frac{\sqrt{3}}{2} \\ 0 & -\frac{1}{2} & 1 \end{bmatrix} v = \begin{bmatrix} 6 \\ 0 \\ 1 \end{bmatrix}$$

$$\left\{ \begin{array}{l} v_1 = 28 \\ v_2 = -10 \\ v_3 = -4 \end{array} \right.$$