7.6.6.

$$\begin{cases} x' + x - y' + y = 0 \\ x' + y' + 2y = 0 \end{cases} \quad \begin{cases} x(0) = 0 \\ y(0) = 1 \end{cases}$$

$$\begin{cases} sX(s) - 0 + X(s) - (sY(s) - 1) + Y(s) = 0 \\ sX(s) - 0 + (sY(s) - 1) + 2Y(s) = 0 \end{cases}$$

$$\begin{cases} (s+1)X(s) - (s-1)Y(s) = -1 \\ sX(s) + (s+2)Y(s) = 1 \end{cases}$$

$$\begin{pmatrix} s+1 & -(s-1) \\ s & s+2 \end{pmatrix} \begin{pmatrix} X(s) \\ Y(s) \end{pmatrix} = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

$$X(s) = \frac{\begin{vmatrix} -1 & -(s-1) \\ 1 & s+2 \end{vmatrix}}{\begin{vmatrix} s+1 & -(s-1) \\ s & s+2 \end{vmatrix}} = \frac{-3}{2s^2+2s+2}$$

$$Y(s) = \frac{\begin{vmatrix} s+1 & -1 \\ s & 1 \end{vmatrix}}{\begin{vmatrix} s+1 & -(s-1) \\ s & s+2 \end{vmatrix}} = \frac{2s+1}{2s^2+2s+2}$$

$$\begin{cases} X(s) = \dfrac{-3}{2(s^2+s+1)} = \dfrac{-\sqrt{3}\sqrt{3}}{2((s+\frac{1}{2})^2+\frac{3}{4})} \\ Y(s) = \dfrac{2s+1}{2(s^2+s+1)} = \dfrac{s+\frac{1}{2}}{((s+\frac{1}{2})^2+\frac{3}{4})} \end{cases}$$

$$\begin{cases} x(t) = -\sqrt{3}e^{-\frac{t}{2}}\sin\dfrac{t\sqrt{3}}{2} \\ y(t) = e^{-\frac{t}{2}}\cos\dfrac{t\sqrt{3}}{2} \end{cases}$$