

(22)

$$\begin{aligned}
 C_1 + C_2 &= 7\frac{1}{60} \\
 3C_1 - 4C_2 &= 3 + \frac{1}{6} + \frac{1}{3} = \frac{30+3+10}{30} = \frac{43}{30} \\
 3C_1 + 3C_2 &= 7\frac{1}{20} = \frac{213}{60}
 \end{aligned}$$

~~$C_2 = \frac{103}{60} - \frac{103}{30} = \frac{103}{60} - \frac{206}{60} = -\frac{103}{60}$~~

$$7C_2 = \frac{213}{60} - \frac{43}{30} = \frac{213}{60} - \frac{206}{60} = \frac{7}{60}$$

$$C_2 = \frac{1}{60}$$

$$C_1 = \frac{79}{60} = 7\frac{1}{6}$$

$$\text{So } y = 7\frac{1}{6} e^{3t} + \frac{1}{60} e^{-4t} - \frac{1}{10} e^t - \frac{1}{6} e^{2t} + \frac{1}{12}$$