

7.2.34.

$$y'' - y = 2 \cos 5t, \quad y(0) = 0$$

Laplace transformera.

$$sY(s) - y(0) - Y(s) = 2 \frac{s}{s^2 + 5^2}$$

$$Y(s) = \frac{2s}{(s^2 + 25)(s - 1)}$$

$$\frac{2s}{(s^2 + 25)(s - 1)} = \frac{As + B}{s^2 + 25} + \frac{C}{s - 1}$$

$$C = \frac{1}{13}, \quad A = -\frac{1}{13}, \quad B = \frac{25}{13}$$

$$Y(s) = \frac{1}{13} \frac{-s + 25}{s^2 + 25} + \frac{1}{s - 1}$$

$$Y(s) = \frac{1}{13} \frac{-s}{s^2 + 5^2} + 5 \frac{5}{s^2 + 5^2} + \frac{1}{s - 1}$$

Återtransformera.

$$y(t) = \frac{1}{13} \left(-\cos 5t + 5 \sin 5t + e^t \right)$$