8.18

1 8.18, §1 Asked

Solve:

$$y'' - y' - 30y = 0$$

2 8.18, §2 Solution

$$y'' - y' - 30y = 0$$

Characteristic polynomial:

$$\lambda^2 - \lambda - 30 = 0$$

has roots $\lambda_1 = 6$ and $\lambda_2 = -5$

General solution:

$$y = C_1 e^{6x} + C_2 e^{-5x}$$