

Daily ODE: 02/11/2022

Solve for $y(x)$: $3y'' - 2y' - 4y = 0$

Char. Equation: $3m^2 - 2m - 4 = 0$

$$m_{1,2} = \frac{2 \pm \sqrt{4 + 48}}{6}$$

$$= \frac{2 \pm \sqrt{52}}{6} = \frac{2 \pm 2\sqrt{13}}{6}$$

$$= \frac{1 \pm \sqrt{13}}{3}$$

Solution: $y(x) = C_1 e^{\left(\frac{1+\sqrt{13}}{3}\right)x} + C_2 e^{\left(\frac{1-\sqrt{13}}{3}\right)x}$