Quiz 8 MTH 335 Fall 2026

Monday, October 12, 2026 4:44 PM

Solve $y'' + 4y' + 5y = 0$

Soln: Chr. eqt is

$$r^2 + 4r + 5 = 0$$

$$\downarrow \text{ use QF}$$

$$r = \frac{-4 \pm \sqrt{16 - 4(1)(5)}}{2(1)} = -2 \pm \frac{1}{2}\sqrt{-4}$$

$$= -2 \pm \frac{2i}{2}$$

$$= -2 \pm i$$

$\Rightarrow$ gen soln is

$$y(t) = c_1 e^{-2t}\cos(2t) + c_2 e^{-2t}\sin(2t)$$