

[Handwritten notes, mostly illegible due to blurring]

DE: $y'' + 2y' + 2y = 0$
Characteristic equation: $r^2 + 2r + 2 = 0$
Roots: $r = -1 \pm i$
Fundamental solutions: $e^{-x} \cos x, e^{-x} \sin x$
General solution: $y = e^{-x} (C_1 \cos x + C_2 \sin x)$