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$$2y'' - 6y' + 17y = 0$$

Auxiliary equation: $2m^2 - 6m + 17 = 0$

$$m = \frac{6 \pm \sqrt{36 - 4(2)(17)}}{4} = \frac{6 \pm \sqrt{-100}}{4} = \frac{6 \pm 10i}{4} = \frac{3}{2} \pm \frac{5}{2}i$$

General solution to ODE:

$$y = c_1 e^{\frac{3}{2}x} \cos\left(\frac{5}{2}x\right) + c_2 e^{\frac{3}{2}x} \sin\left(\frac{5}{2}x\right)$$