B 4.4   Auxillary Equations with Complex Roots

- Given the case where we solve the auxillary and end up with an r that is complex, may be of the form $\alpha \pm \beta i$, we can write the general solution as:

$$e^{\alpha t}\left[c_1 \cos(\beta t) + c_2 \sin(\beta t)\right]$$

- You can follow the same procedure for initial value with this general solution