1. Assume plant model is

\[ G(s) = \frac{2}{s+3}, \quad Y(s) = G(s) U(s) \]

2. **Objective:** Tracking reference or rejecting disturbance of known types but not magnitudes
   a. \( r(t) = a + b t + c t^2 + d \sin(3t) + e \cos(2t) \)
   b. \( r(t) = a + b \sin(3t) \)

3. Laplace transform of \( r(t) \). Let \( \psi(s) \) be its denominator

4. Choose controller of the form: \( C(s) = \frac{\text{den}(s)}{\psi(s)} \)

5. Will choose \( \text{den}(s) \) such that closed loop system is stable

6. Steady state error analysis - **NOTE** numerator of closed loop transfer function

7. Does the steady state error depend on what actual system poles?
8. Choose desirable poles and design \( \text{den}(s) \) to obtain it?
   a. how many parameters? how many equations to solve?

**Summary:** What are the advantages of Internal Model control and why? What are the limitations?