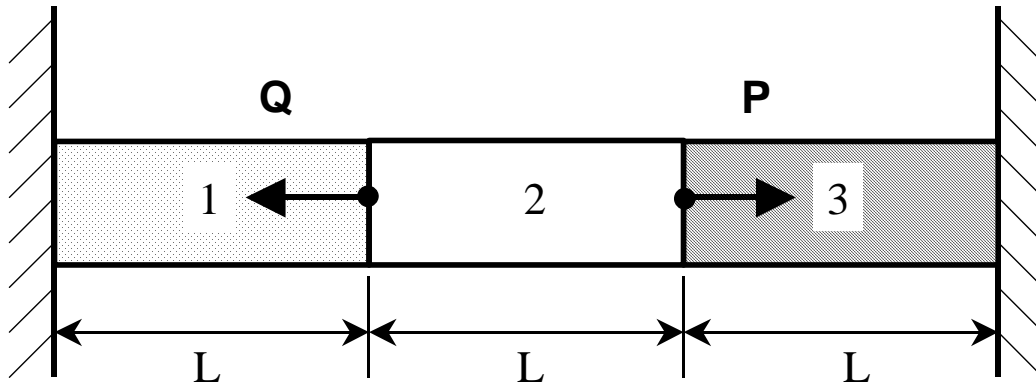
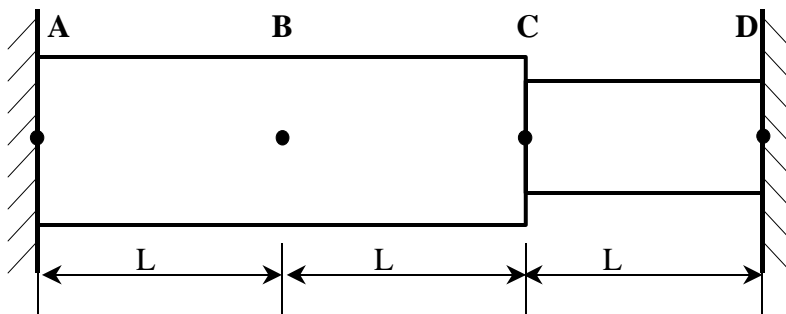


Recall Axial Loads: Rods in Series

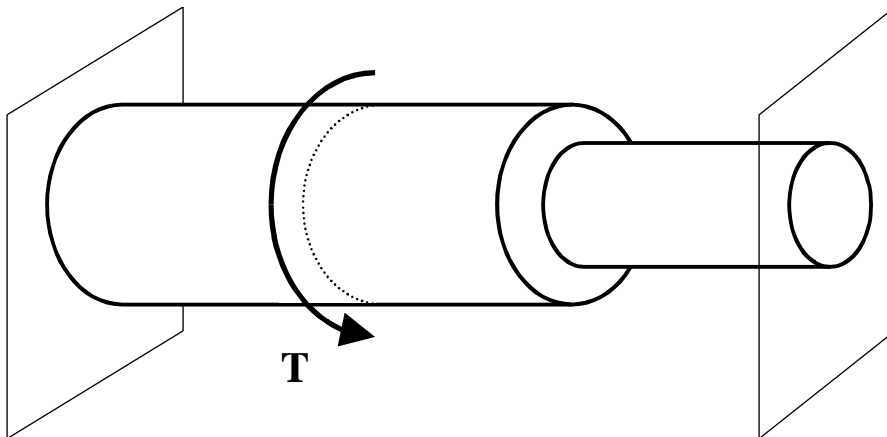


What is the relationship between δ_1 , δ_2 , and δ_3 ?

Torsion: Multiple Rods in Series



Side View



3D View

Given: Torque, T , applied at point B

$$L_{AC} = 2L \quad L_{CD} = L$$

$$J_{AC} = 2J \quad J_{CD} = J$$

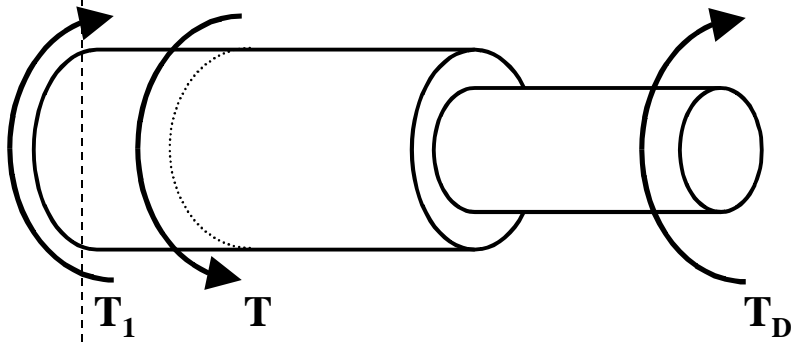
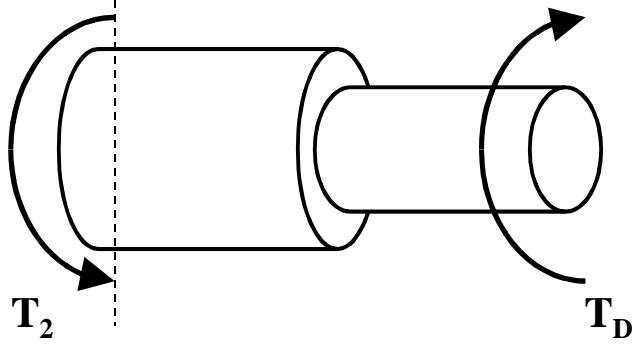
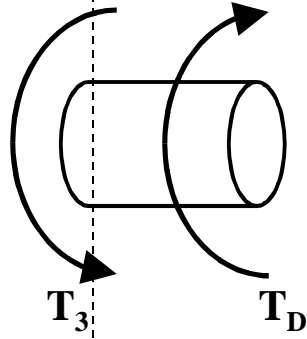
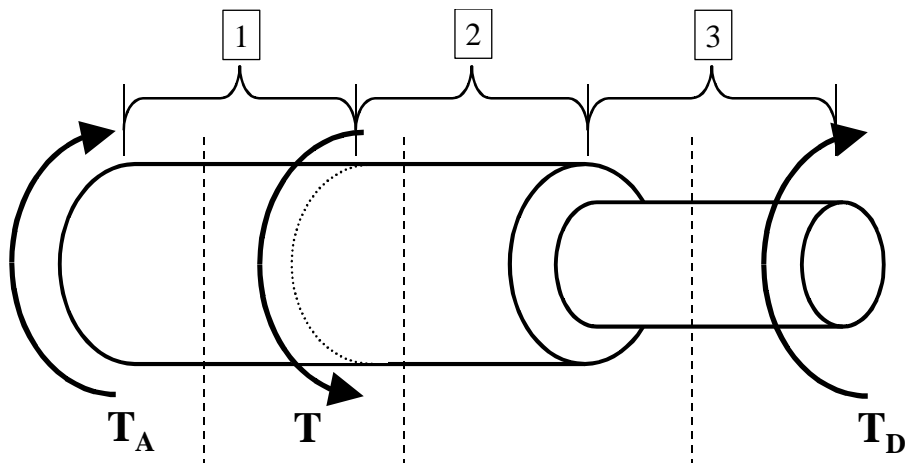
$$G_{AC} = 2G \quad G_{CD} = G$$

Find: a) reactions at A and D, T_A and T_D ; b) twist at C, ϕ_C .

What is the twist of D, ϕ_D , relative to A?

How many pieces must this system be subdivided into?

What is the relationship between the twists, ϕ_1 , ϕ_2 , etc., of these pieces?



--OR--

