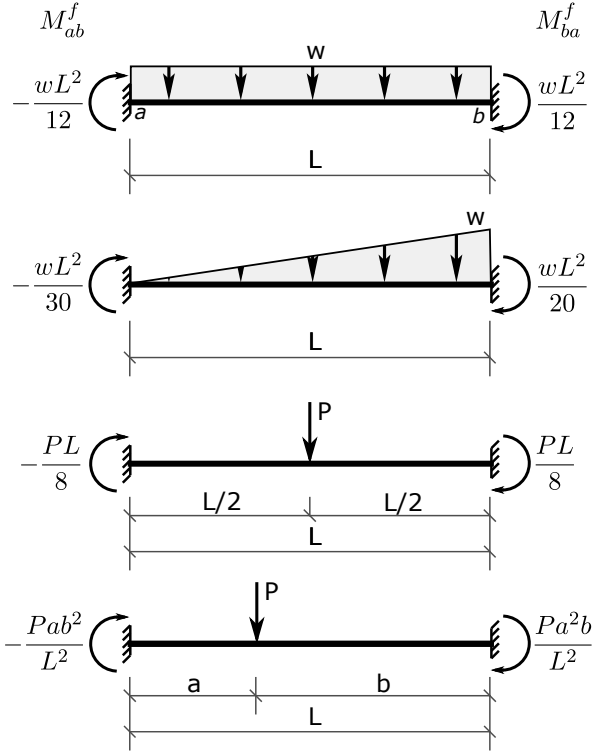
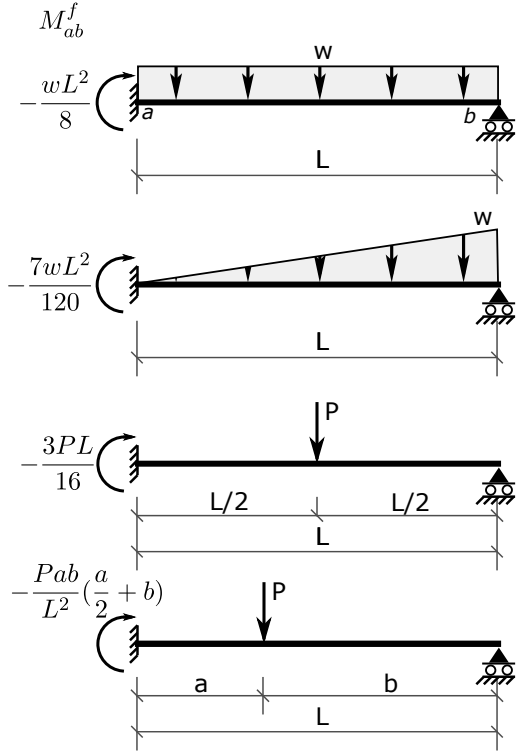


Fixed-End Moments

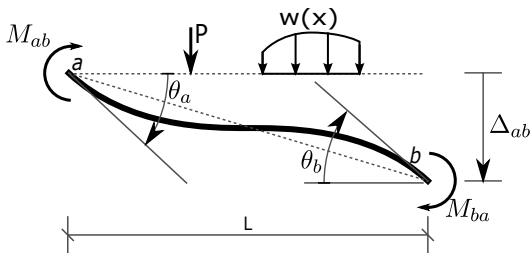
Both Ends Fixed



M=0 at Far End (pinned)

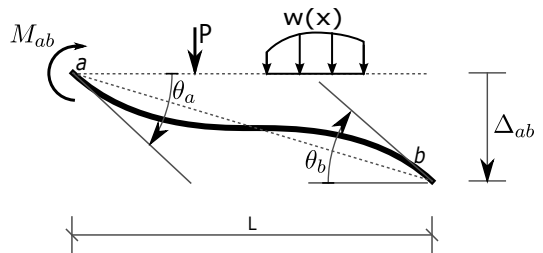


Slope-Deflection Relationships



$$M_{ab} = \frac{EI}{L} \left(4\theta_a + 2\theta_b - 6\frac{\Delta_{ab}}{L} \right) + M_{ab}^f$$

$$M_{ba} = \frac{EI}{L} \left(2\theta_a + 4\theta_b - 6\frac{\Delta_{ab}}{L} \right) + M_{ba}^f$$



$$M_{ab} = \frac{EI}{L} \left(3\theta_a - 3\frac{\Delta_{ab}}{L} \right) + M_{ab}^f$$

$$M_{ba} = 0 \quad (\theta_b \text{ not required}).$$