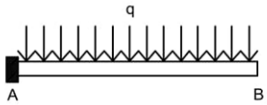
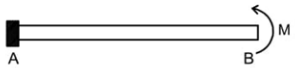
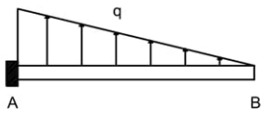
$$\Delta_B = \frac{PL^3}{3EI} \qquad \theta_B = \frac{PL^2}{2EI}$$



$$\Delta_B = \frac{qL^4}{8EI} \qquad \theta_B = \frac{qL^3}{6EI}$$

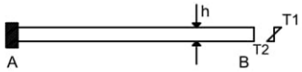


$$\Delta_B = \frac{ML^2}{2EI} \qquad \theta_B = \frac{ML}{EI}$$



$$\Delta_B = \frac{qL^4}{30EI}$$

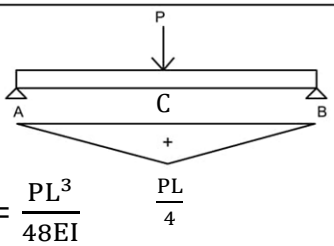
$$\theta_B = \frac{qL^3}{24EI}$$



$$\Delta_B = \frac{\alpha \Delta T L^2}{2h}$$

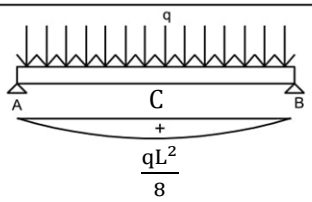
$$\theta_B = \frac{\alpha \Delta T L}{h}$$

هیچگونه نیرو و تنشی در عضو ایجاد نمی‌شود

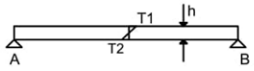


$$\Delta_C = \frac{PL^3}{48EI}$$

$$\theta_A = \theta_B = \frac{PL^2}{16EI}$$



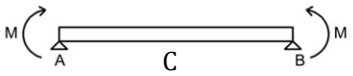
$$\Delta_C = \frac{5qL^4}{384EI} \qquad \theta_A = \theta_B = \frac{qL^3}{24EI}$$



هیچگونه نیرو و تنشی در عضو ایجاد نمی‌شود

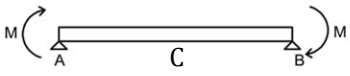
$$\theta_A = \theta_B = \frac{\alpha \Delta T L}{2h} \qquad R_A = R_B = 0$$

$$\Delta_C = \frac{\alpha \Delta T L^2}{8h} \qquad \frac{M}{EI} = \frac{\theta}{L} = \frac{\alpha \Delta T}{h} = \frac{1}{\rho}$$



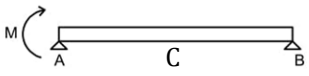
$$\Delta_C = \frac{ML^2}{8EI} \qquad \theta_A = \frac{ML}{2EI}$$

$$\theta_B = \frac{ML}{2EI}$$



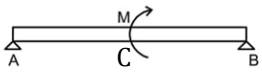
$$\Delta_C = 0 \qquad \theta_A = \frac{ML}{6EI}$$

$$\theta_B = \frac{ML}{6EI}$$



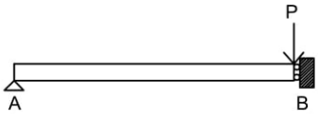
$$\Delta_C = \frac{ML^2}{16EI} \qquad \theta_A = \frac{ML}{3EI}$$

$$\theta_B = \frac{ML}{6EI}$$

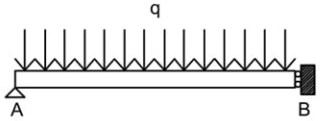


$$\Delta_C = 0 \qquad \theta_A = \frac{ML}{24EI}$$

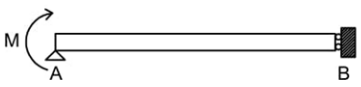
$$\theta_B = \frac{ML}{24EI} \qquad \theta_C = \frac{ML}{12EI}$$



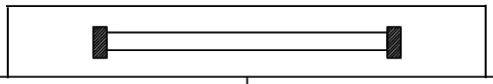
$$\Delta_B = \frac{PL^3}{3EI} \qquad \theta_A = \frac{PL^2}{2EI}$$

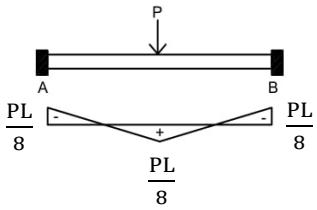


$$\Delta_B = \frac{5qL^4}{24EI} \qquad \theta_B = \frac{qL^3}{3EI}$$



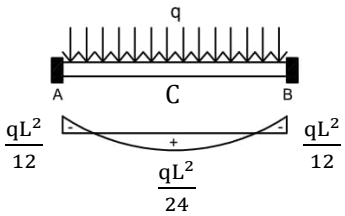
$$\Delta_B = \frac{ML^2}{2EI} \qquad \theta = \frac{ML}{EI} \qquad M_B = M$$





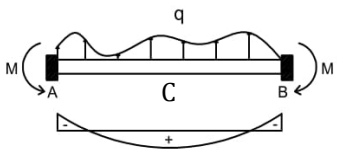
$$\Delta_B = \frac{PL^3}{192EI}$$

$$M_A = M_B = \frac{PL}{8}$$



$$\Delta_c = \frac{qL^4}{384EI}$$

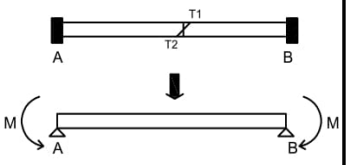
$$M_A = M_B = \frac{qL^2}{12}$$



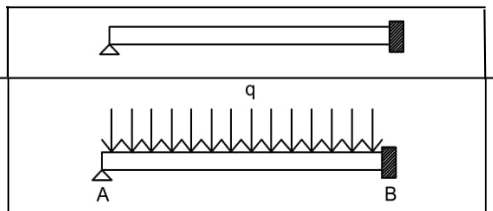
برای هر نوع بارگذاری داریم:

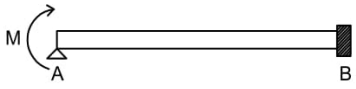
$$\frac{M_A + M_B}{2} + M_c = M_c$$

دو سر مفصل با همان بارگذاری



$$M = \frac{EI\alpha\Delta T}{h}$$



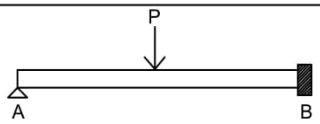


$$R_B = \frac{3M}{2L} \qquad M_B = \frac{M}{2}$$

$$\theta_A = \frac{ML}{4EI}$$

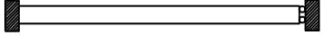
$$R_A = \frac{3}{4}qL \qquad M_B = \frac{qL^2}{8}$$

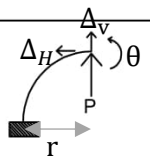
$$\theta_A = \frac{qL^3}{48EI}$$



$$R_A = \frac{5}{16}P \qquad M_B = \frac{3PL}{16}$$

$$\theta_A = \frac{PL^2}{32EI}$$

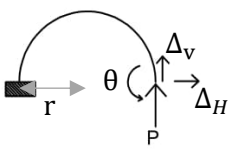




$$\Delta_V = \frac{\pi}{4} * \frac{Pr^3}{EI}$$

$$\Delta_H = \frac{1}{2} * \frac{Pr^3}{EI}$$

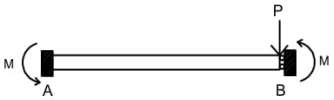
$$\theta = \frac{Pr^2}{EI}$$



$$\Delta_V = \frac{3\pi}{2} * \frac{Pr^3}{EI}$$

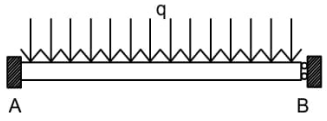
$$\Delta_H = 2 * \frac{Pr^3}{EI}$$

$$\theta = \pi * \frac{Pr^2}{EI}$$



$$\Delta_B = \frac{PL^3}{12EI} \qquad M_A = \frac{PL}{2}$$

$$M_B = \frac{PL}{2}$$



$$\Delta_B = \frac{qL^4}{24EI} \qquad M_A = \frac{qL^2}{3}$$

$$M_B = \frac{qL^2}{6}$$