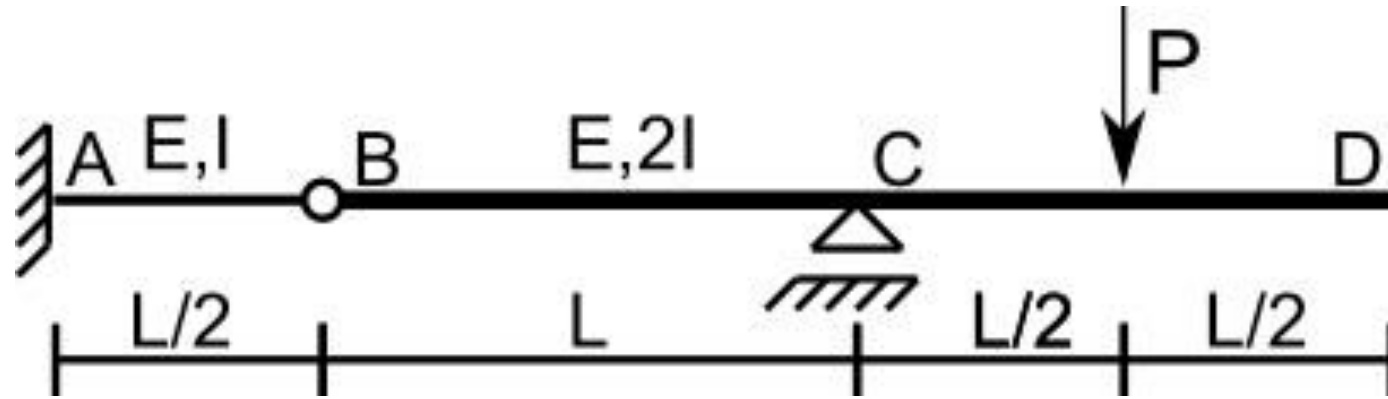


Ejemplo

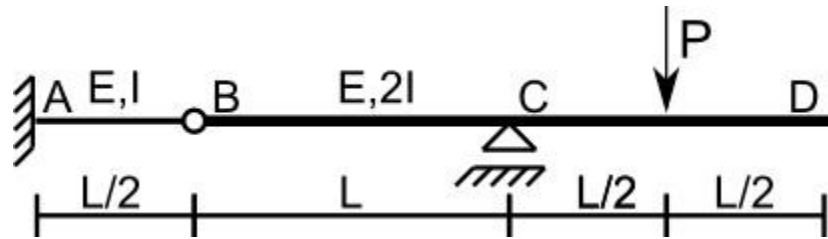
Determinar el descenso de **D**.



Viga análoga (Analogía de Mohr)

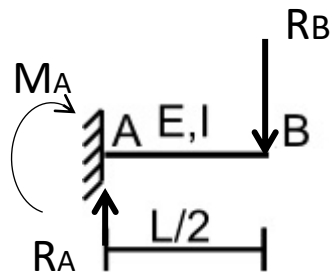
Ejemplo con otras condiciones de borde.

Determinar el descenso de **D**.

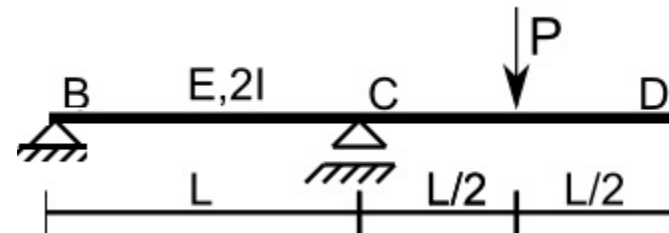


$$\frac{M}{EI} \leftrightarrow -\bar{q}; \quad \theta \leftrightarrow \bar{V}; \quad v \leftrightarrow \bar{M}$$

Tramo AB



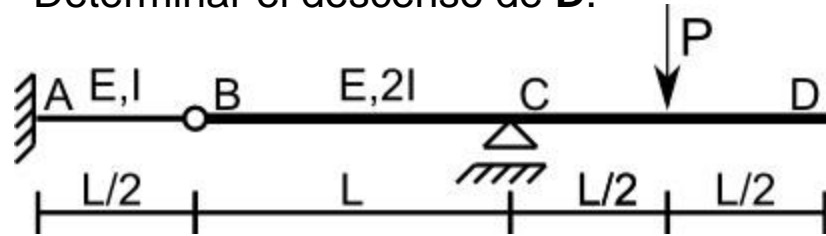
Tramo BCD



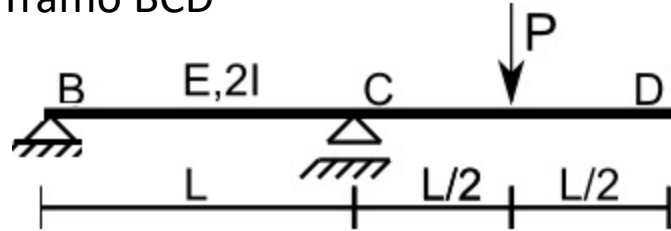
Viga análoga (Analogía de Mohr)

Ejemplo con otras condiciones de borde.

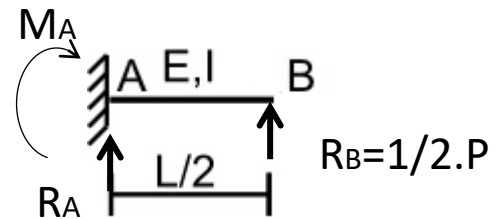
Determinar el descenso de D.



Tramo BCD



Tramo AB



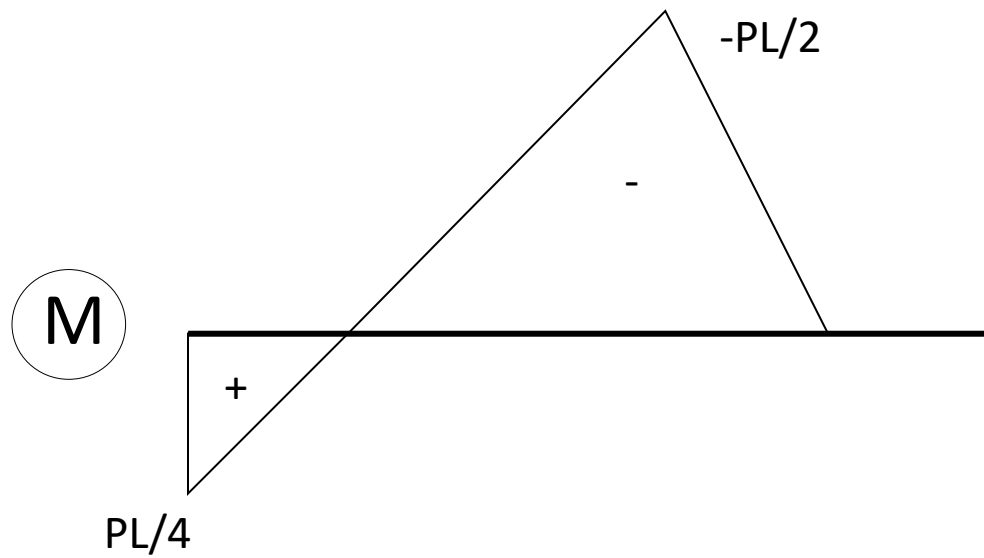
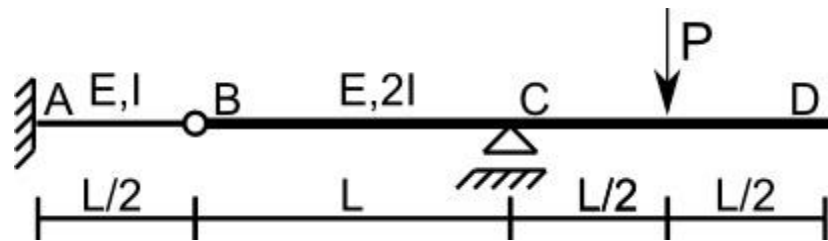
$$\frac{M}{EI} \leftrightarrow -\bar{q}; \quad \theta \leftrightarrow \bar{V}; \quad v \leftrightarrow \bar{M}$$

Tramo BCD Suma (F)= 0 $\rightarrow R_B + R_C = P$

Suma(M_B)=0 $\rightarrow L \cdot R_C - 3/2L \cdot P = 0 \rightarrow R_C = 3/2 \cdot P \rightarrow R_B = -1/2 \cdot P$

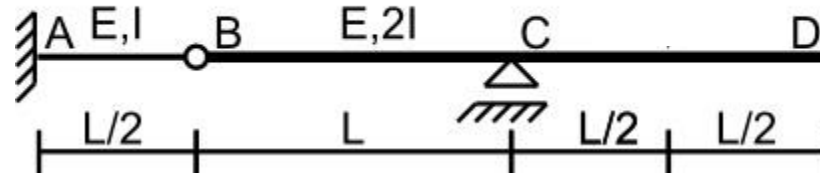
Tramo AB Suma (F)= 0 $\rightarrow 1/2 \cdot P + R_A = 0 \rightarrow R_A = -1/2 \cdot P$

Suma(M_A)=0 $\rightarrow M_A - L/2 \cdot P/2 = 0 \rightarrow M_A = P \cdot L/4$

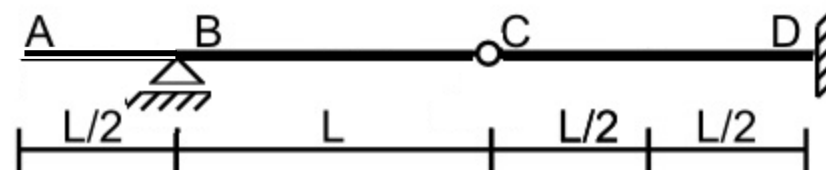


Viga análoga: vínculos

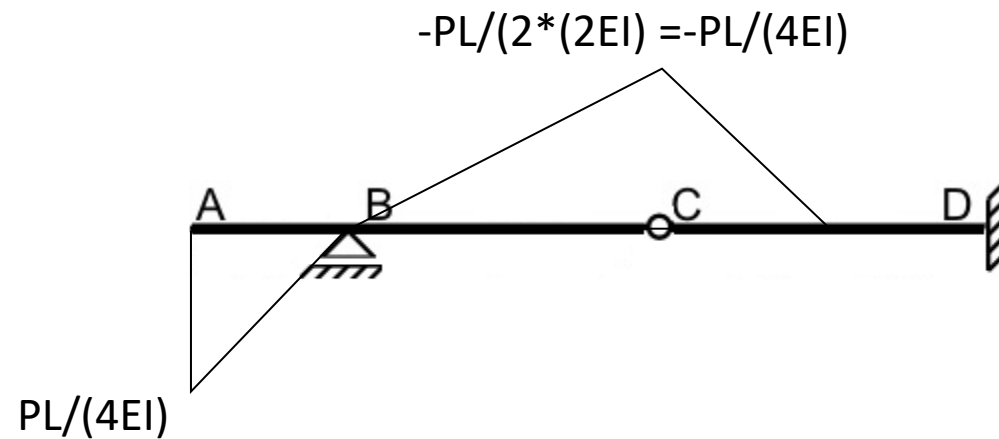
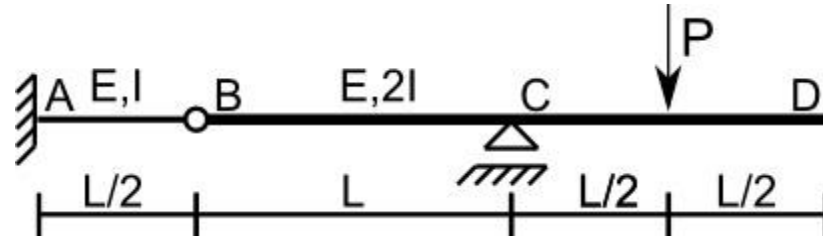
Viga original



Viga análoga

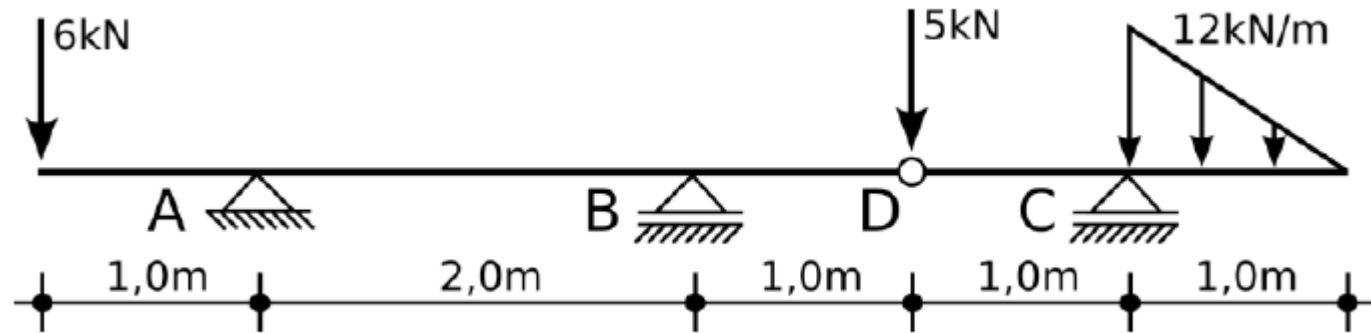


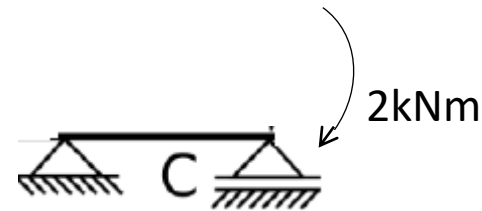
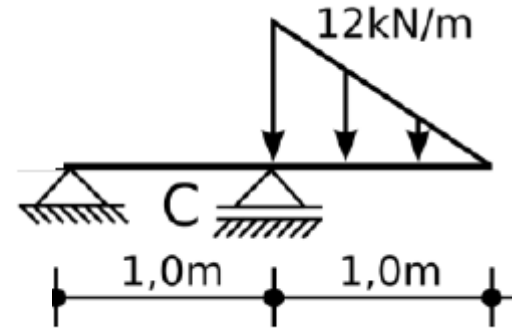
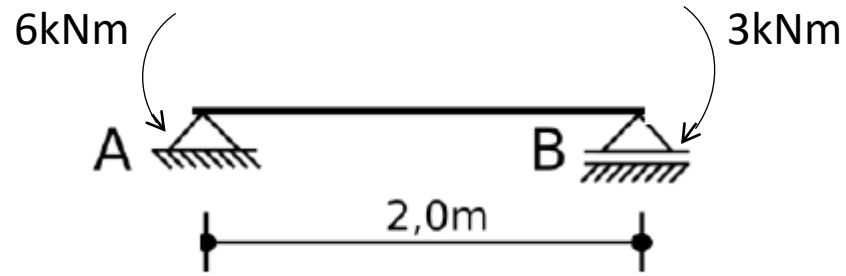
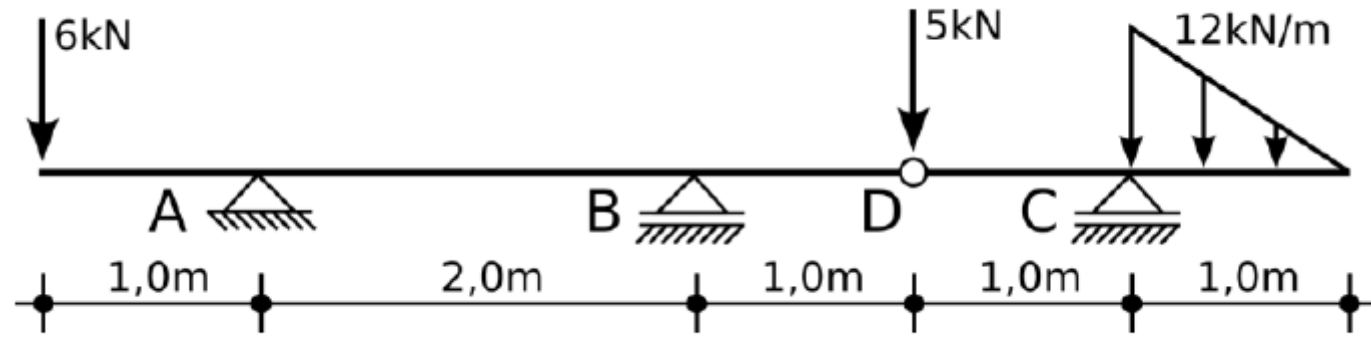
Carga



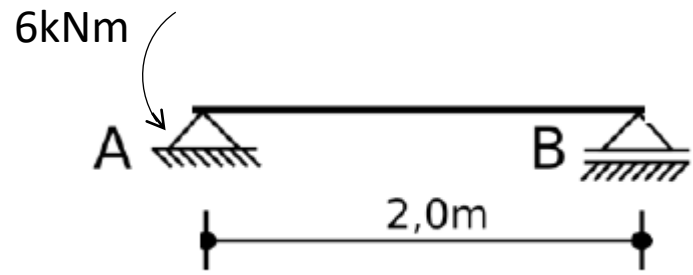
$$\frac{M}{EI} \leftrightarrow -\bar{q}; \quad \theta \leftrightarrow \bar{V}; \quad v \leftrightarrow \bar{M}$$

Ejemplo Calcular θ_{D_izq} θ_{D_der}

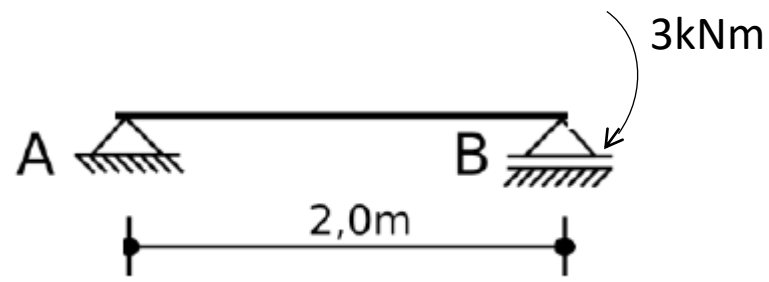




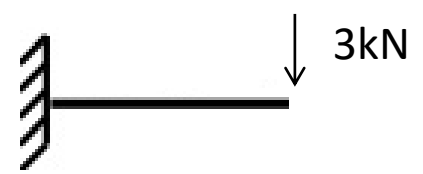
θ_{D_izq}



$$\theta_{B1} = ML/6EI = 6 * 2 / 6EI = 0.0026 \text{ rad}$$



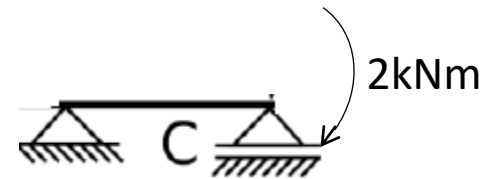
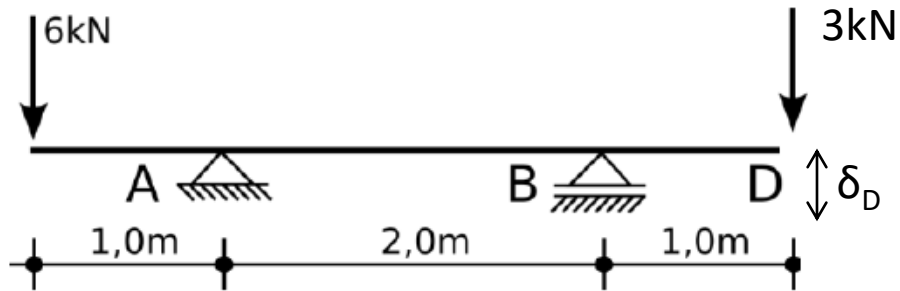
$$\theta_{B2} = ML/3EI = 3 * 2 / 3EI = 0.0026 \text{ rad}$$



$$\theta_{D3} = PL^2/2EI = 3 * 1^2 / 2EI = 0.0019 \text{ rad}$$

$$\theta_{D_izq} = 0.0071 \text{ rad} \quad \text{horario}$$

θ_{D_der}



$$\delta_D = \theta_{1B} * 1 + \theta_{2B} * 1 + \delta_{D_mensula}$$

$$\delta_{D_mensula} = PL^3/3EI = 3 * 1^3/3EI$$

$$\delta_D = 0.0065m$$

$$\theta_{D_der} = 0.0065 \text{ rad} + \theta_{D_der_momento}$$

$$\theta_{D_der} = 0.0065 + 0.0004 = 0.007 \text{ rad antihorario}$$

$$\theta_{D_der_momento} = ML/6EI = 2 * 1/6EI$$

$$\theta_{D_der_momento} = 0.0004$$

