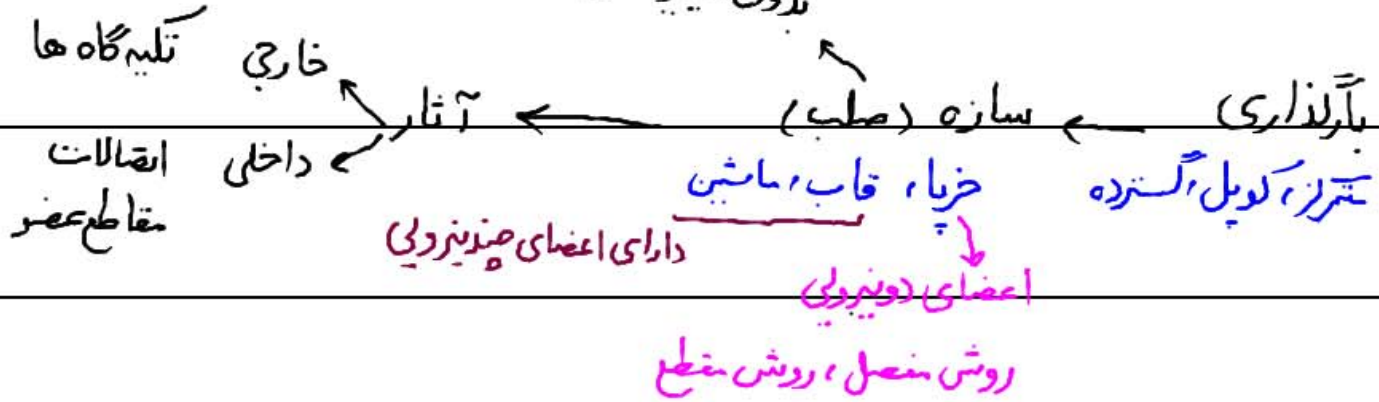


تمرین:

MDSOLID  
MathMech

خلاصه:

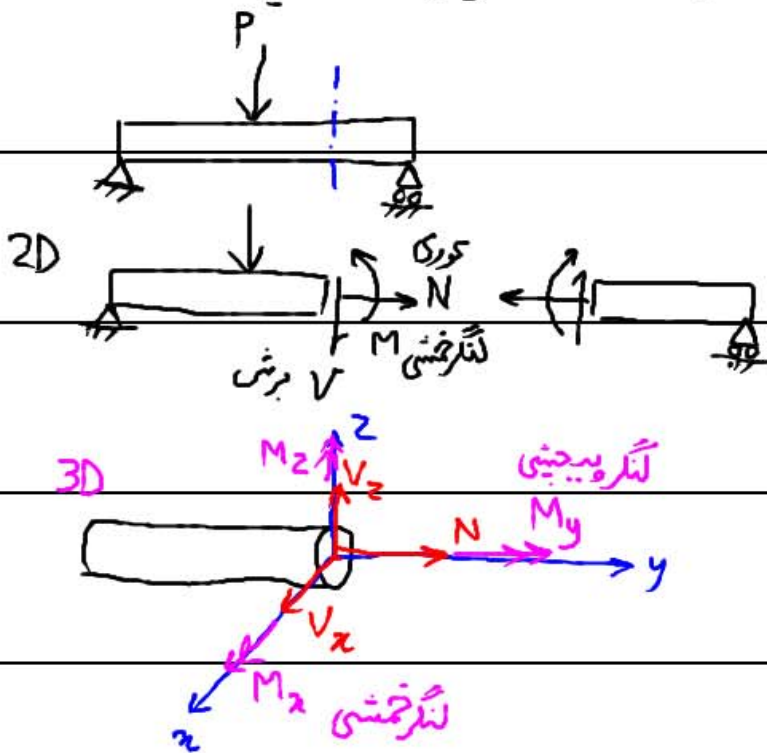
بدون تغییر شکل

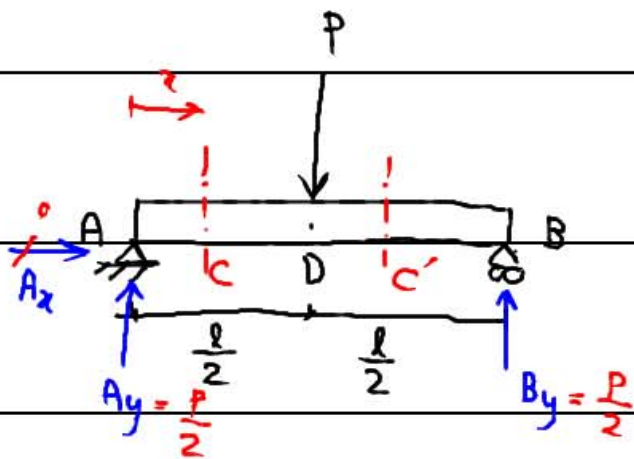


FBD: کل سازه  
بخشی از سازه  
تک تک اعضا

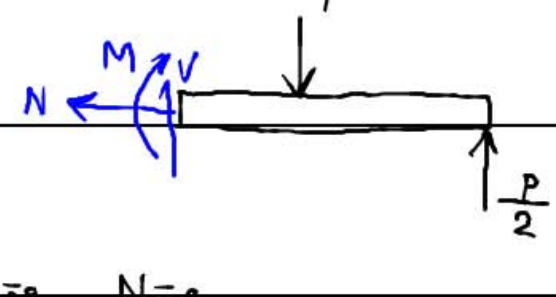
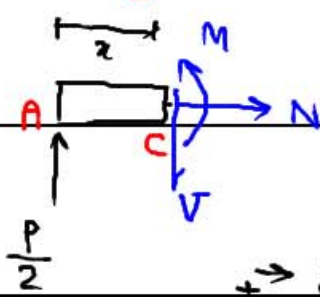
معادلات تعادل

پایدار، معین

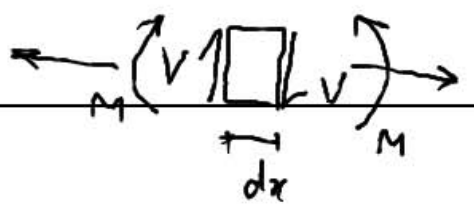




برای هر مقطع بین A و D



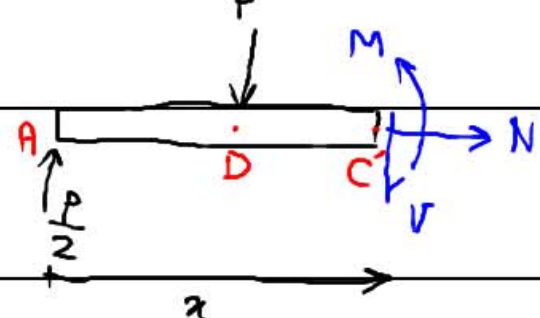
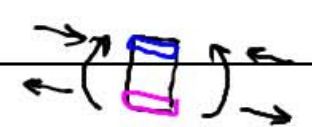
فرار داد



$$\rightarrow \sum F_x = 0 \quad N = 0$$

$$\uparrow \sum F_y = 0 \quad \frac{P}{2} - V = 0 \rightarrow V = \frac{P}{2}$$

$$\curvearrow \sum M_C = 0 \quad -\frac{P}{2}x + M = 0 \rightarrow M = \frac{P}{2}x$$



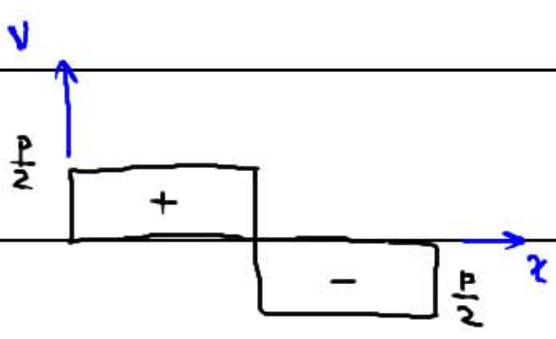
برای هر مقطع بین B و D

$$\sum F_x = 0 \quad N = 0$$

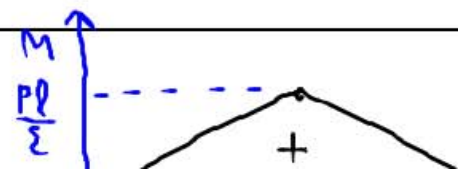
$$\sum F_y = 0 \quad \frac{P}{2} - P - V = 0 \rightarrow V = -\frac{P}{2}$$

$$\curvearrow \sum M_C = 0 \quad M - \frac{P}{2}x + P(x - \frac{l}{2}) = 0$$

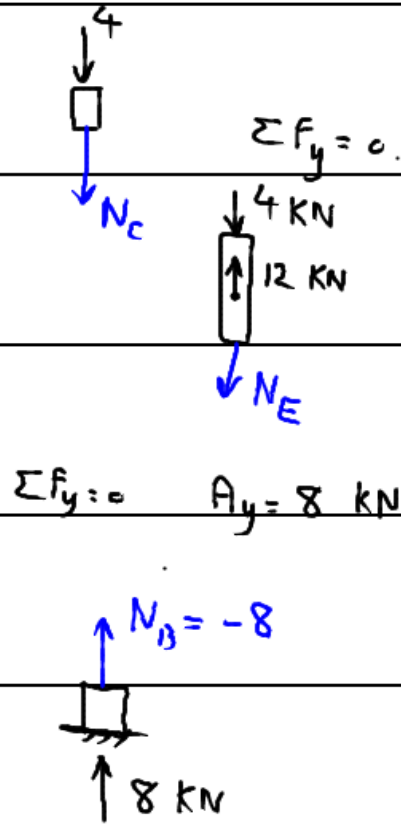
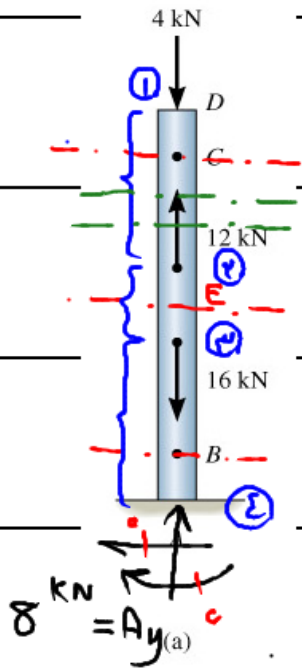
$$M = -\frac{P}{2}x + \frac{Pl}{2}$$



نردار نیروی برشی



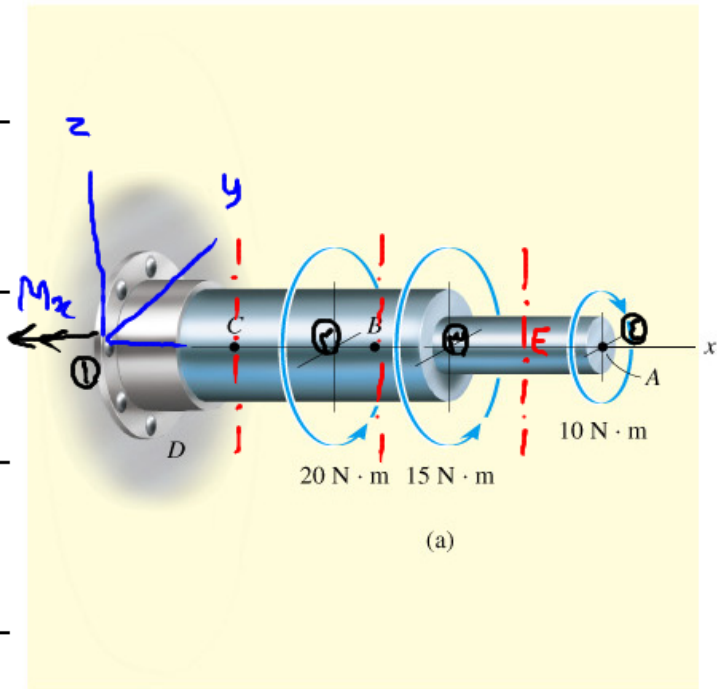
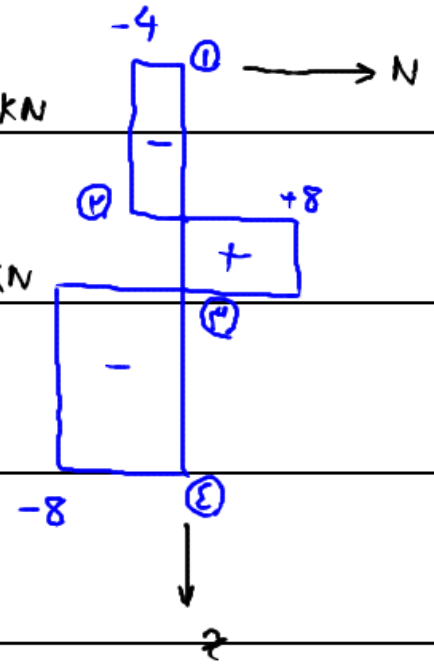
ال ان اف ش



$$\sum F_y = 0. \quad N_C = -4 \text{ kN}$$

$$N_E = +8 \text{ kN}$$

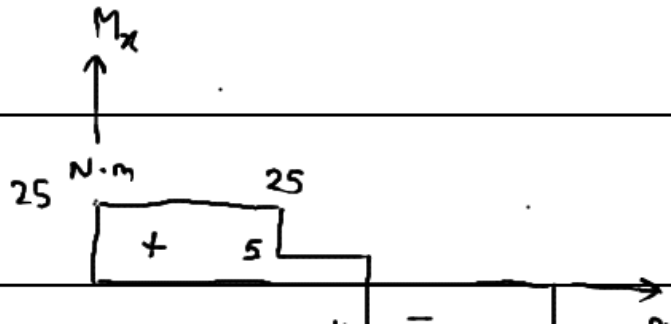
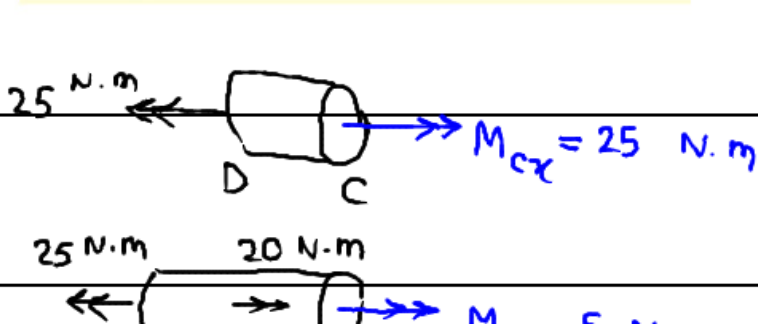
$$\sum F_y = 0 \quad A_y = 8 \text{ kN}$$



$$\sum M_x = 0$$

$$-10 + 15 + 20 - M_x = 0$$

$$M_x = 25 \text{ N}\cdot\text{m}$$



D  $10x = 5 \text{ N}\cdot\text{m}$

-10

