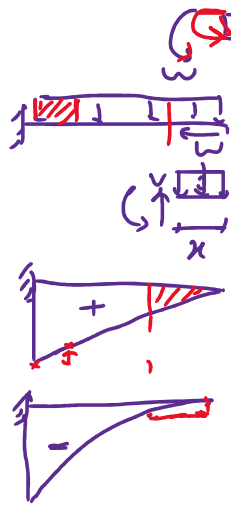
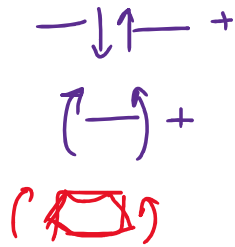


Beams

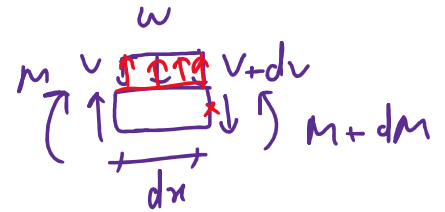
Sunday, October 22, 2023 17:15

تحليل زوئيا معين (1) تير
 (2) قاب لها
 (3) خرابها



$$V = wx$$

$$M = \frac{wx^2}{2}$$



$$\sum F_y = 0 \rightarrow \cancel{V} + w dx - (V + dV) = 0 \rightarrow \frac{dV}{dx} = +w$$

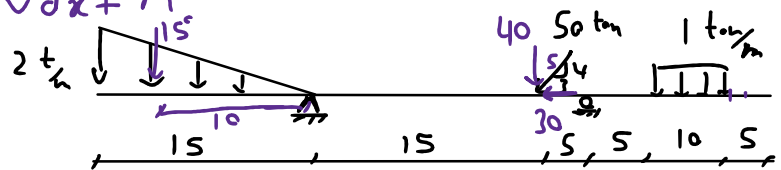
$$\sum M = 0 \rightarrow V dx + \cancel{M} + w \frac{dx^2}{2} - (\cancel{M} + dM) = 0 \rightarrow \frac{dM}{dx} = V$$

$$\begin{cases} \frac{dV}{dx} = w \\ \frac{dM}{dx} = V \end{cases}$$

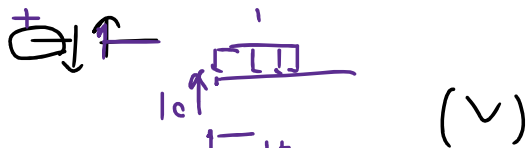
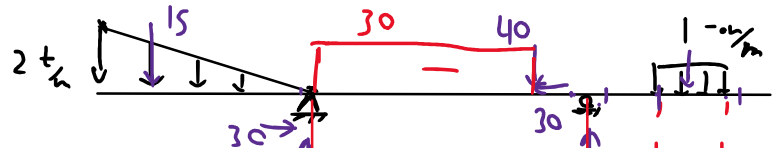
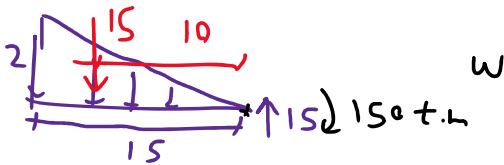
$$\rightarrow \begin{cases} V = \int w dx + v \\ M = \int V dx + M \end{cases}$$

$$\frac{dM}{dx} = V$$

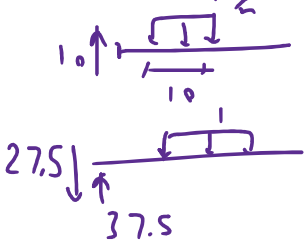
$$40 \times 15 + 10 \times 30 - 15 \cdot 10 = 20R$$



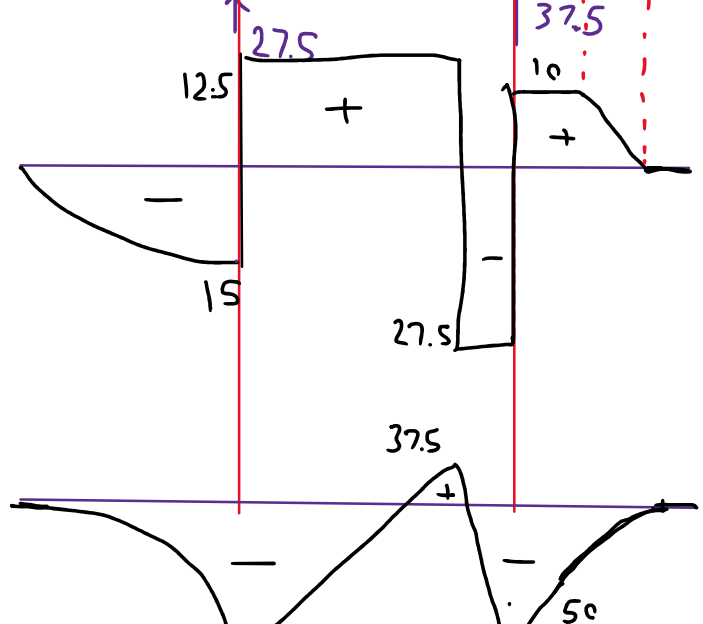
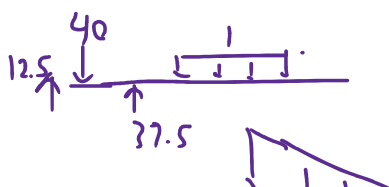
مثال:

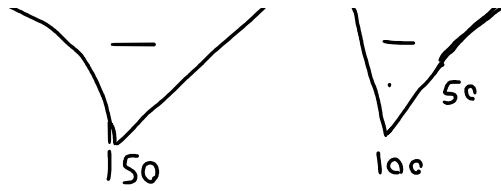
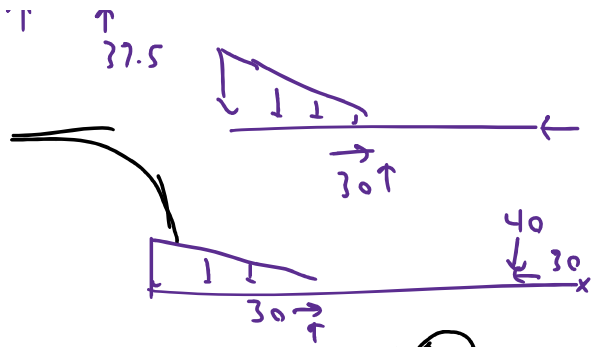


(V)



(M)





$$n = 3 - (2 + 1) = 0$$

