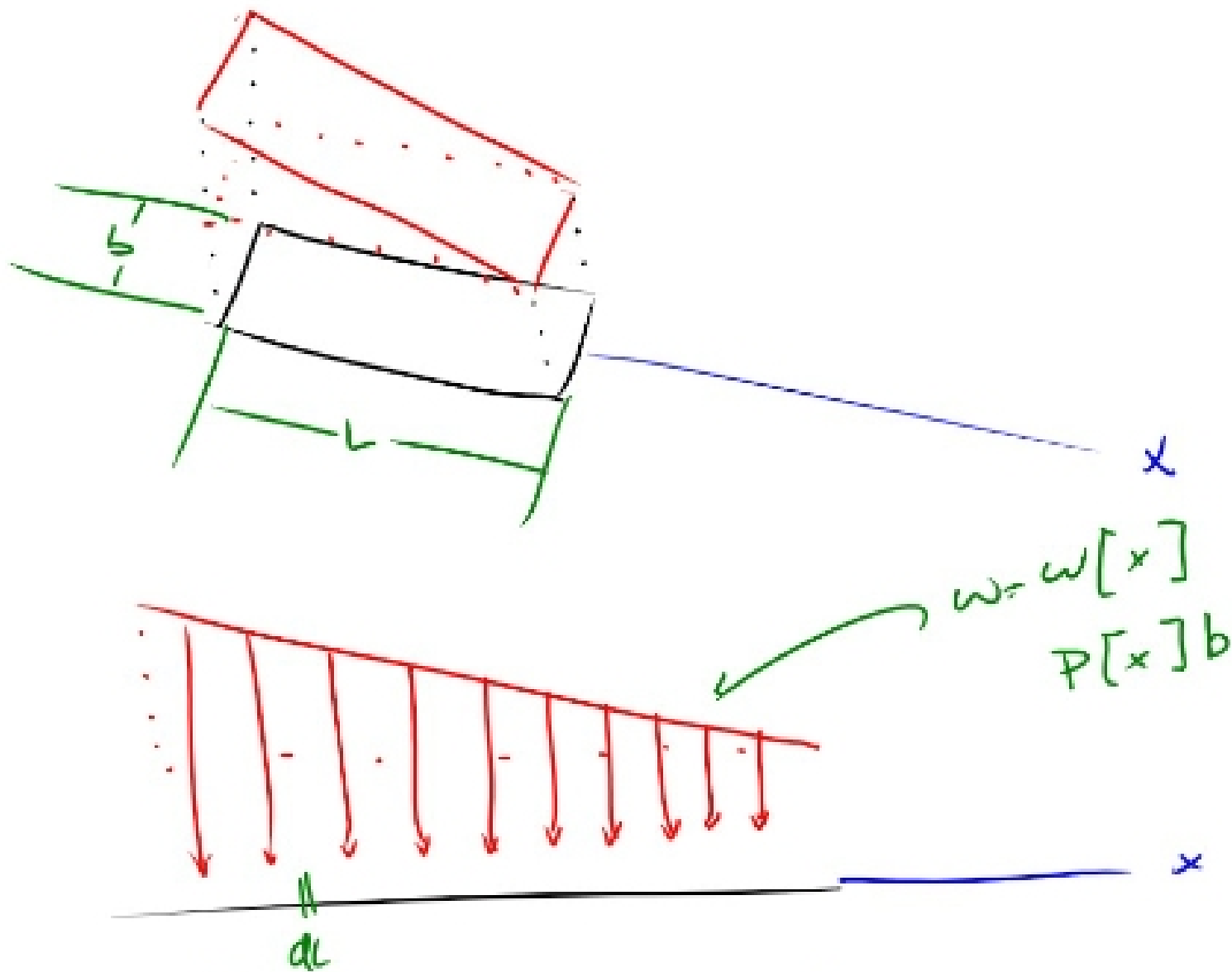


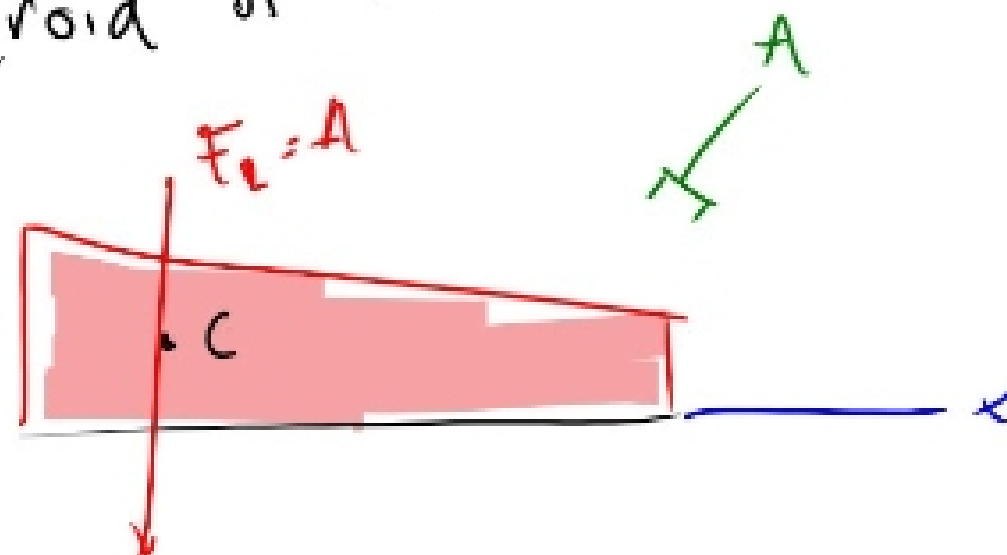
Distributed Loads

Wednesday, November 4, 2015 6:07 PM



$$F_R = \int_L w dx = \int_A dA = A$$

$F_R = A$, acts through centroid of A

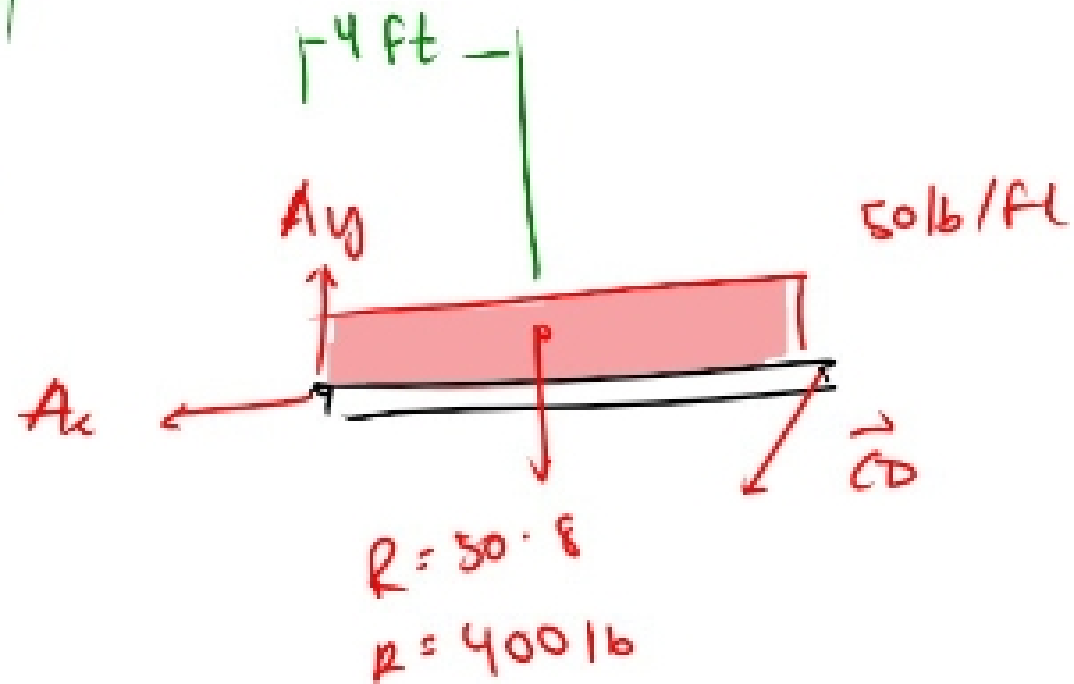
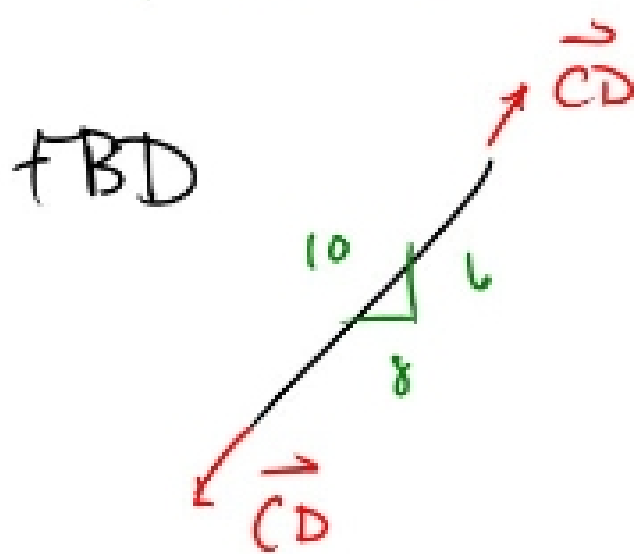
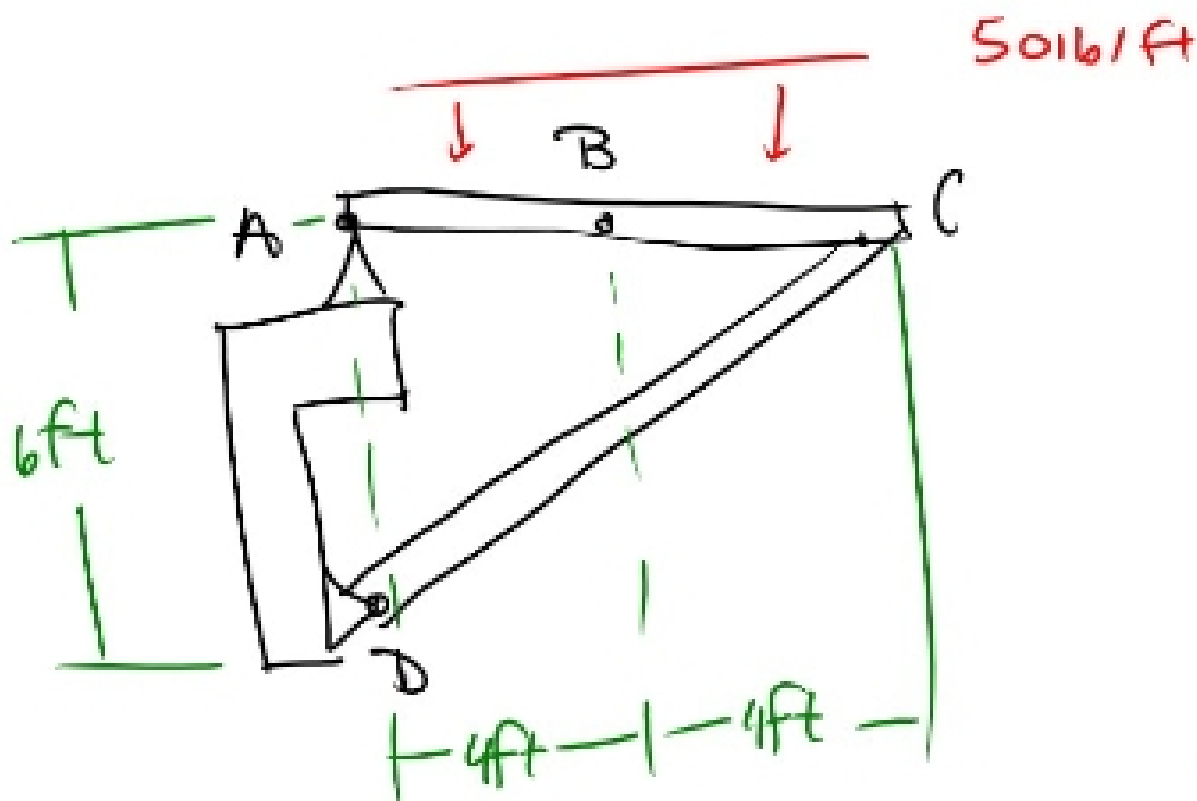


$$w[x] - \text{units } \frac{N}{m}$$

$w[x]$ - units $\frac{N}{m}$

↳ "distributed load intensity"

Ex: Determine the internal loads at B.



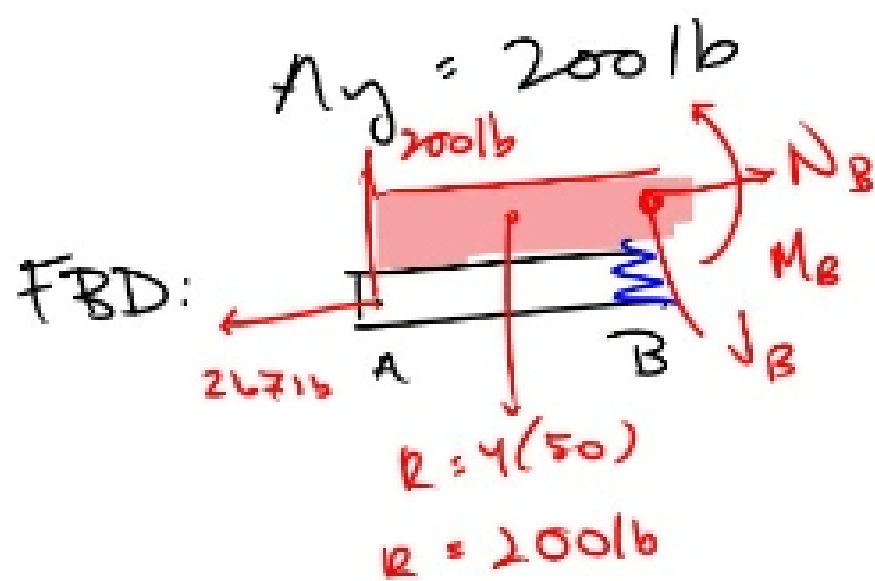
$$\sum M_A = 0 = -400(4) + CD \frac{6}{10}(8)$$

$$CD = 333 \text{ lb}$$

$$\sum F_x = 0 = Ax - \frac{6}{10} CD$$

$$\sum F_x = -267$$

$$\sum F_y = 0 = A_y - R - \frac{6}{10} (D)$$



$$M_B | - 200(4) + 200(2) + M_B$$

$$M_B = 400 \text{ ft} \cdot \text{lb}$$

$$N_B = 267 \text{ lb}$$

$$V_B = 0 \text{ lb}$$