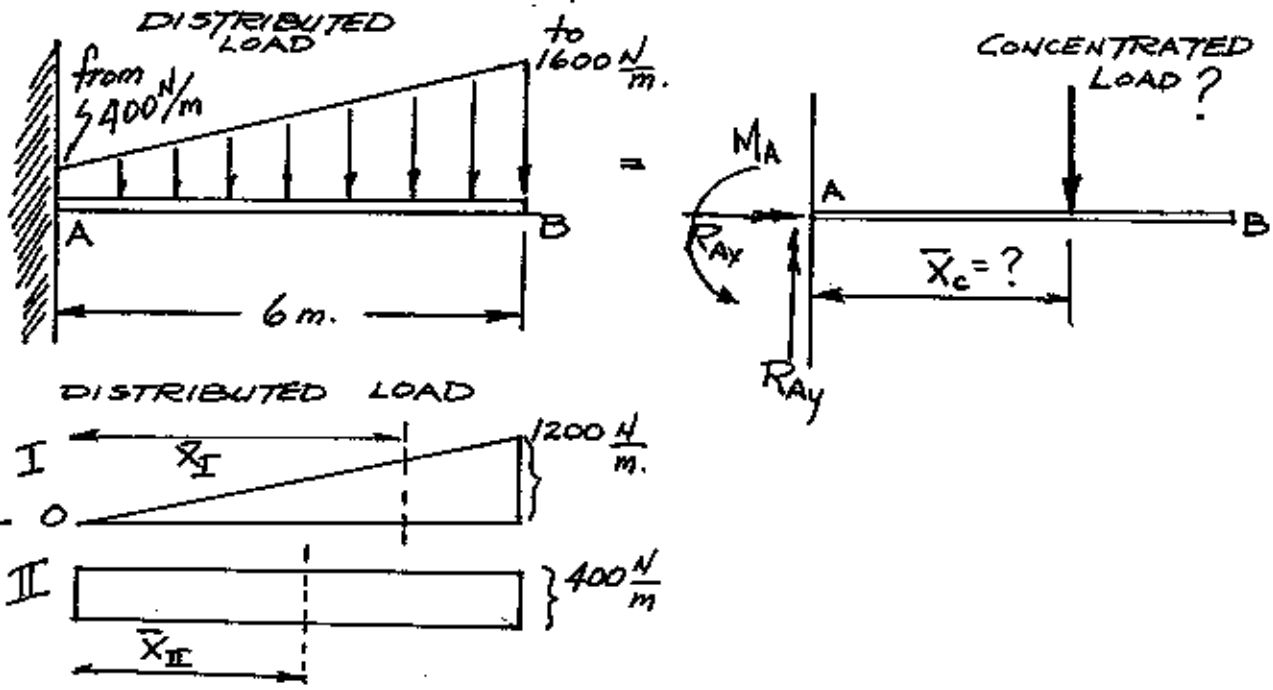
GM

MECH 234 + 235
DISTRIBUTED LOAD

PROB. 5-75
p. 246

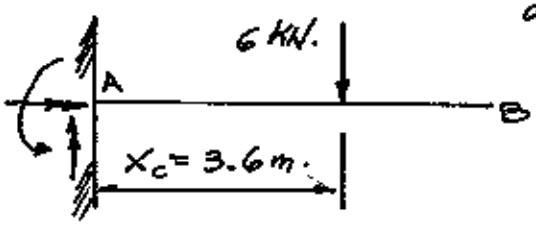
See Sample Prob. 5.9, p. 242



Sect.	Area	Centroid from left
I	$\frac{1}{2}bh = \frac{1}{2}(6m)(1200\frac{N}{m}) = 3600N.$	$\frac{2}{3}b = \frac{2}{3}(6m) = 4m.$
	$= 3600N.$	
II	$bh = (6m)(400\frac{N}{m}) = 2400N.$	$\frac{1}{2}b = \frac{1}{2}(6m.) = 3m.$

$$\bar{X}_c = \frac{\Sigma A\bar{x}}{\Sigma A} = \frac{(3600)(4m.) + (2400N.)(3m.)}{6000N.} = \boxed{3.6m. = X_c}$$

and CONCENTRATED LOAD = 6000 N.



$\Sigma F_x = 0 = R_{Ax}$ ✓

$\Sigma F_y = 0 = R_{Ay} - 6^{KN}$

$\therefore \boxed{R_{Ay} = 6\ KN.\uparrow}$

$\Sigma M_A = 0 = M_A - (6^{KN})(3.6m.)$

$\therefore \boxed{M_A = 21.6\ KN\text{-}m\ CCW = 21{,}600\ N\text{-}m\ \curvearrowleft}$