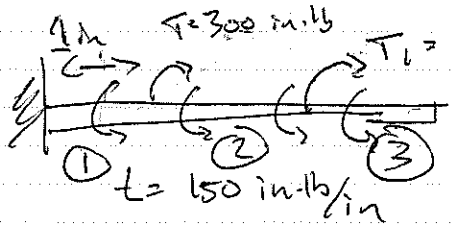
MAX TORSION

MAX BENDING

SORTA LIKE 5.20

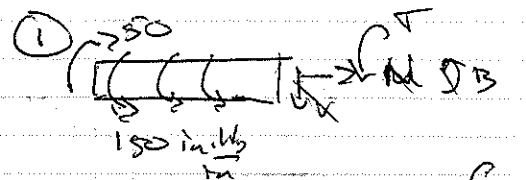


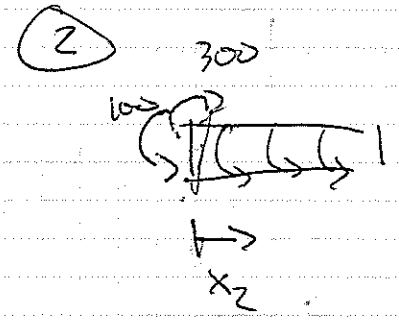
$$\tau = \frac{Tc}{J}$$

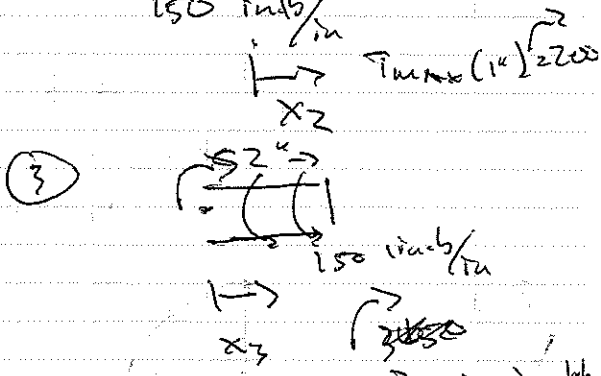
$$T_R = 150(5) - 300 - 400$$

$$= 50 \text{ in-lb}$$

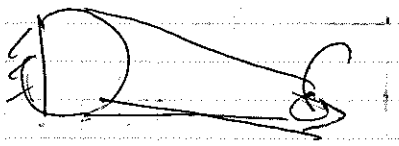
$$\tau_{MAX} = \frac{300 \text{ in-lb}\,(3.75)}{2\,\pi/4\,(3.75/2)^2}$$

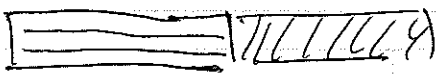


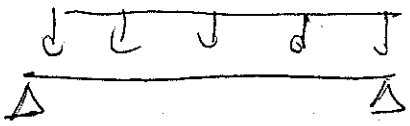


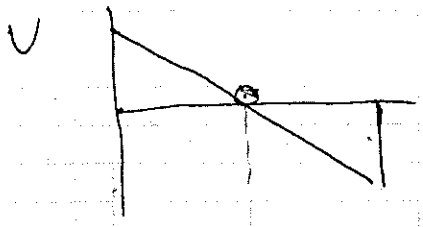


$$J = \int_A r^2\,dA$$

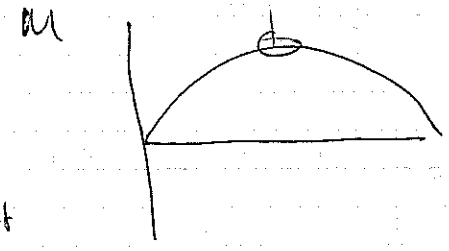


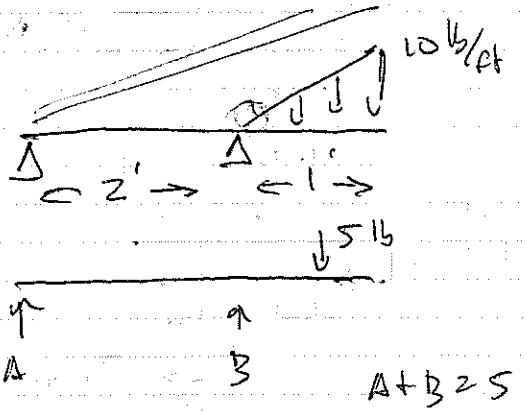


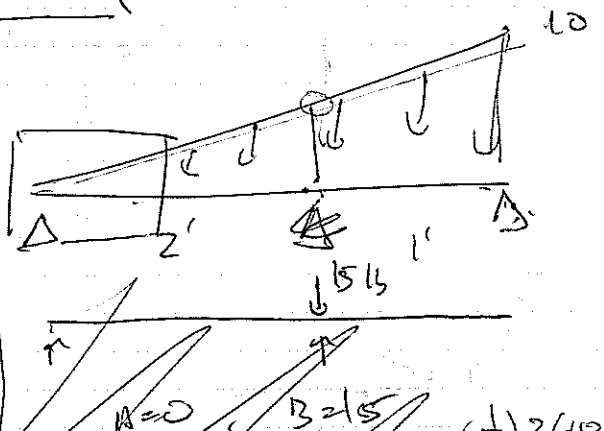




$$\frac{10}{3} = \frac{h}{x}$$





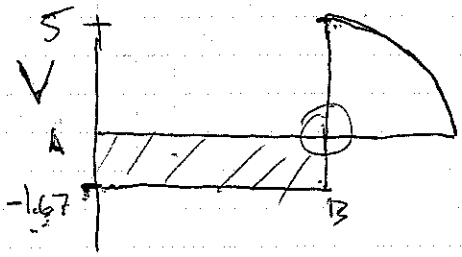


$A + B = 5$

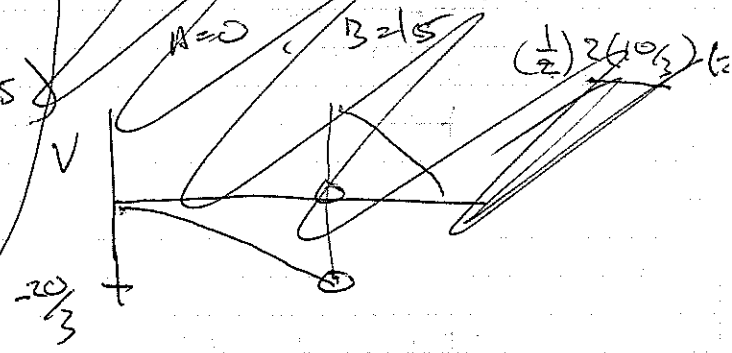
$\sum M_A = 0 = 2B - 2.67(5)$

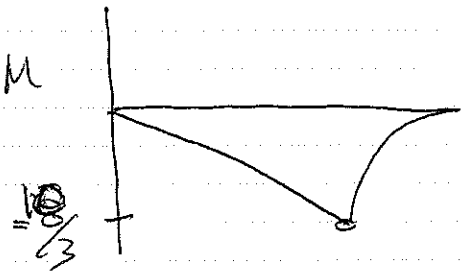
$B = 6.667$

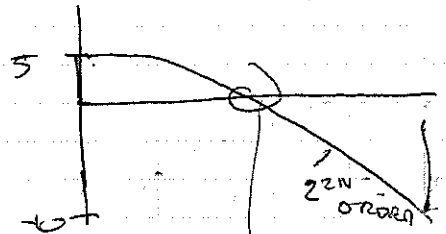
$A = -1.6667$

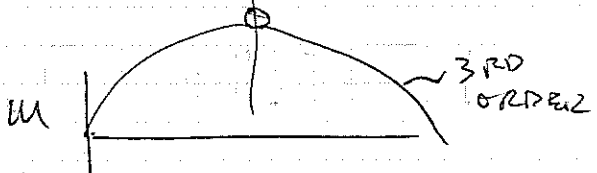


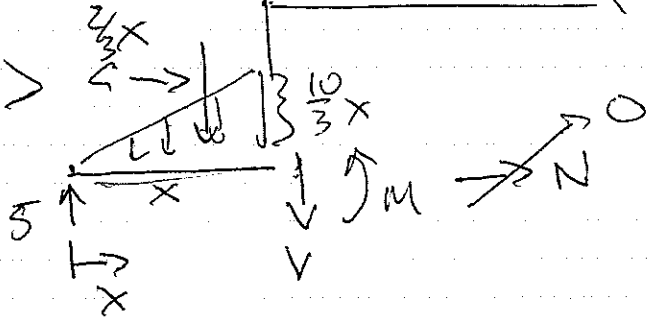
$V(x) = 0$











$\sum F_y = 0$

$= -V + 5 - \frac{5}{3}x^2$

$V = 5 - \frac{5}{3}x^2$

$\sum M = 0$

$= M + \frac{5}{3}x^2\left(\frac{1}{3}x\right) - 5x$