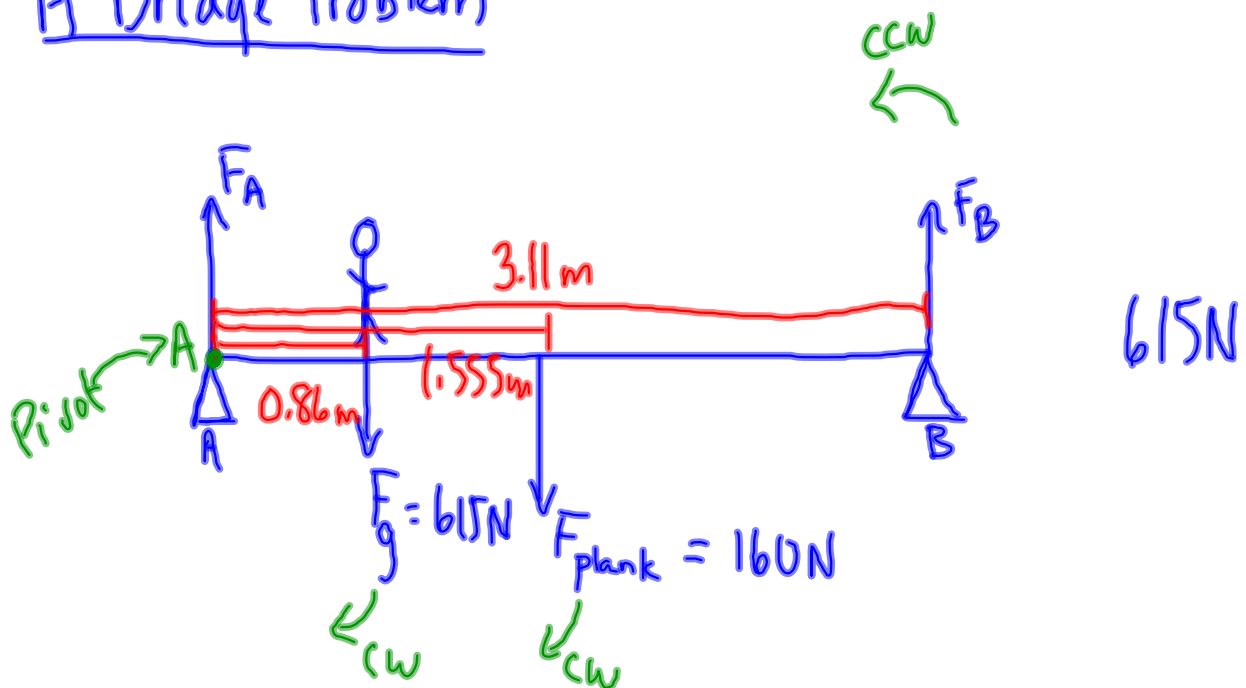


# A Bridge Problem



Choose A as the Pivot:

$$\sum \tau_{\text{ccw}} = \sum \tau_{\text{cw}}$$

$$\tau_B = \tau_g + \tau_{\text{plank}}$$

$$(3.11\text{ m})F_B = (0.86\text{ m})(615\text{ N}) + (1.555\text{ m})(160\text{ N})$$

$$(3.11\text{ m})F_B = 528.9\text{ N}\cdot\text{m} + 248.8\text{ N}\cdot\text{m}$$

$$F_B = 250\text{ N}$$

250 N ← we got

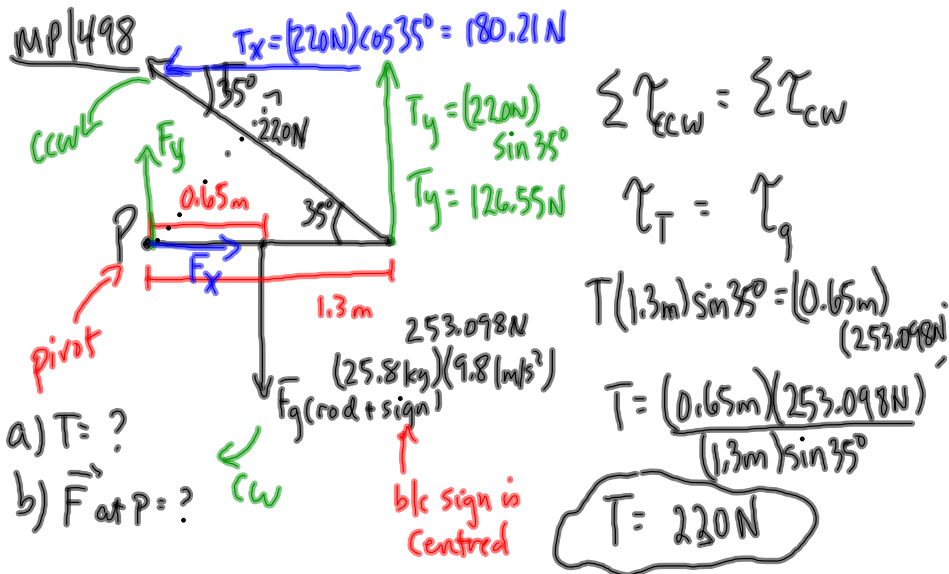
$F_{\text{net}} = 0$ , so

$$F_A + F_B = F_g + F_{\text{plank}}$$

$$F_A + 250\text{ N} = 160\text{ N} + 615\text{ N}$$

$$F_A = 525\text{ N}$$

540 N ← we got (scaled reading)



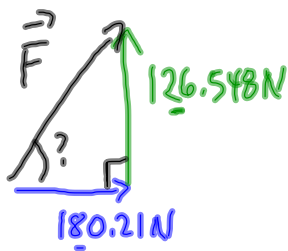
b) Horizontally:

$F_x = T_x$   
 $F_x = 180.21N$

Vertically:

$F_y + T_y = F_g$   
 $F_y = 253.098N - 126.55N$   
 $F_y = 126.548N$

same blk of symmetry.



$c^2 = a^2 + b^2$

$c^2 = (126.548N)^2 + (180.21N)^2$

$c = 2.2 \times 10^2 N$

$\tan \theta = \frac{opp}{adj}$

$\tan \theta = \frac{126.548N}{180.21N}$

$\theta = 35^\circ$

Same as T  
 because of  
 the SYMMETRY.

To Do:

① FOP | PP

② Assignment: FOP | 15, 16, 18, 21, 22 (WEI)

answers not correct