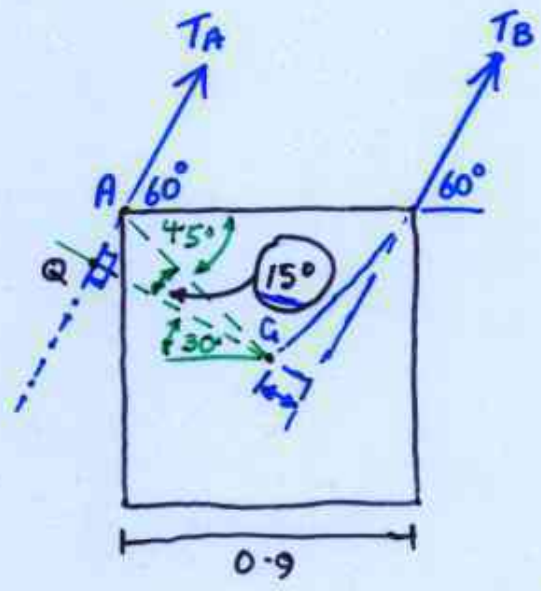


Note  $|AG| = (0.9) \cos 45^\circ$   
 $= \frac{0.9}{\sqrt{2}}$

$\Rightarrow |GQ| = \left(\frac{0.9}{\sqrt{2}}\right) \cos(15^\circ)$

MOMENT ARM  
of  $\vec{T}_A$



MORE DIRECT APPROACH

take moment about P  
i.e. intersection of  $\vec{T}_B$  &  $\vec{a}$

$\Sigma M_P = I_G \alpha + m a_G d$

$I_G \alpha = 0$  because TRANSLATION  
 $\Rightarrow \alpha = 0$

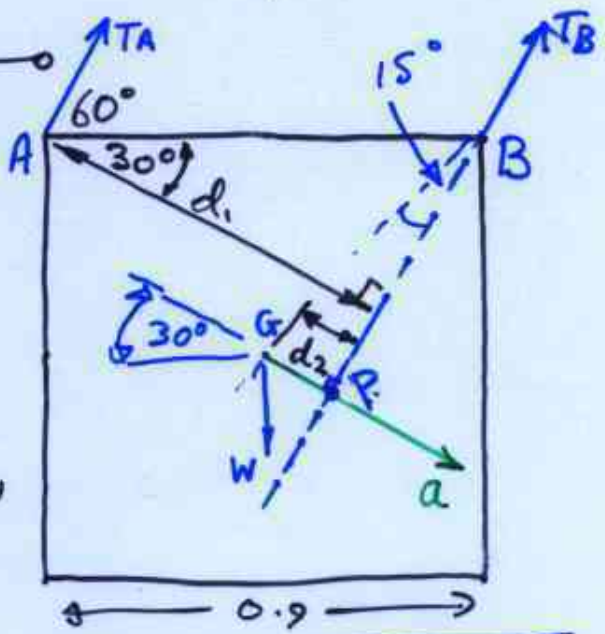
$m a_G d = 0$  because  $d = 0$   
due to location of P

$\therefore \Sigma M_P = 0$

$\Rightarrow -T_A d_1 + W d_2 = 0$

$\Leftrightarrow T_A = \frac{W d_2}{d_1}$   
 $T_A = \frac{(m \times g) \cos(30^\circ) \left(\frac{0.9}{\sqrt{2}}\right) \sin(15^\circ)}{(0.9) \cos(30^\circ)}$

$T_A = 1616 \text{ N}$



$d_1 = (0.9) \cos(30^\circ)$   
 $d_2 = |PG|$   
 $|BG| = \frac{0.9}{\sqrt{2}}$   
 $\Rightarrow |PG| = \frac{0.9}{\sqrt{2}} \sin(15^\circ)$