

10a) Fulcrum place @ A

$$\Sigma \text{cwT} = \Sigma \text{ccwT}$$

$$40.\text{kg}(9.8 \frac{\text{m}}{\text{s}^2})(3.0\text{m}) + 60.\text{kg}(9.8 \frac{\text{m}}{\text{s}^2})(4.0\text{m}) = F_B(6.0\text{m})$$

$$F_B = 588 \text{ N } \uparrow$$

$$F_{\text{up}} = F_{\text{down}}$$

$$F_A + 588 \text{ N } \uparrow = 392 \text{ N } \downarrow + 588 \text{ N } \downarrow$$

$$F_A = 392 \text{ N } \uparrow$$

$$F_A = 3.9 \times 10^2 \text{ N } \uparrow$$

$$F_B = 5.9 \times 10^2 \text{ N } \uparrow$$

b) Fulcrum place @ A

$$\Sigma \text{cwT} = \Sigma \text{ccwT}$$

$$(40.\text{kg} + 60.\text{kg})(9.8 \frac{\text{m}}{\text{s}^2})(3.0\text{m}) = F_B(4.5\text{m})$$

$$F_B = 653.33 \text{ N } \uparrow$$

$$F_{\text{up}} = F_{\text{down}}$$

$$F_A + 653.33 \text{ N } \uparrow = 392 \text{ N } \downarrow + 588 \text{ N } \downarrow$$

$$F_A = 326.67 \text{ N } \uparrow$$

$$F_A = 3.3 \times 10^2 \text{ N } \uparrow$$

$$F_B = 6.5 \times 10^2 \text{ N } \uparrow$$