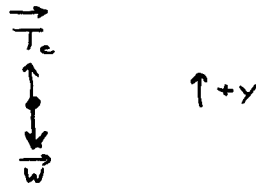


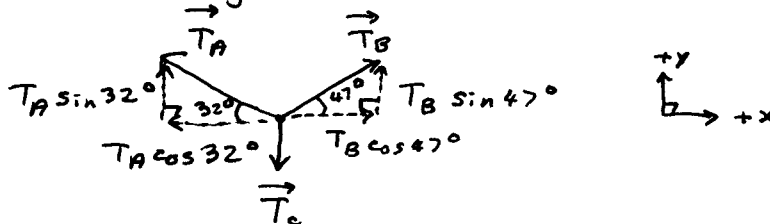
Exercise 8-11

(a) Forces on "box":



$$\Sigma F_y = 0 \therefore T_c = W$$

Forces on knot joining cords:



$$\Sigma F_x = 0 \therefore T_B \cos 47^\circ - T_A \cos 32^\circ = 0 \therefore T_B = 1.24 T_A$$

$$\Sigma F_y = 0 \therefore T_A \sin 32^\circ + T_B \sin 47^\circ - T_c = 0$$

Subst. $T_c = W$ & $T_B = 1.24 T_A$.

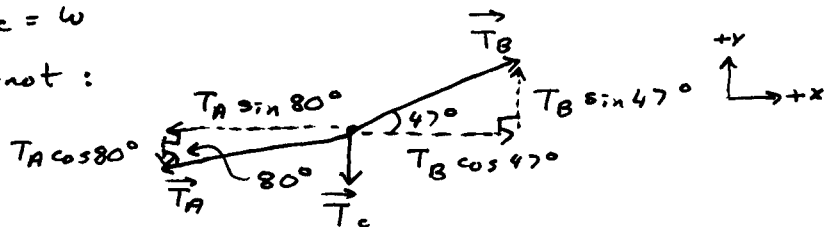
$$\therefore T_A \sin 32^\circ + (1.24 T_A) \sin 47^\circ - W = 0$$

$$\therefore T_A = 0.69 W \quad (0.695 W)$$

$$\text{Then, } T_B = 1.24 T_A = 0.86 W$$

(b) As in part (a), $T_c = W$

Then, Forces on knot:



$$\Sigma F_x = 0 \therefore T_B \cos 47^\circ - T_A \sin 80^\circ = 0 \therefore T_B = 1.44 T_A$$

$$\Sigma F_y = 0 \therefore T_B \sin 47^\circ - T_A \cos 80^\circ - T_c = 0$$

Subst. $T_B = 1.44 T_A$ & $T_c = W$

$$\therefore (1.44 T_A) \sin 47^\circ - T_A \cos 80^\circ - W = 0$$

$$\therefore T_A = 1.1 W \quad (1.13 W)$$

$$\text{Then, } T_B = 1.44 T_A = 1.6 W$$