

EQN. (2):

$$R_A = (0.2)(1.37 \times 10^4) + 0.342(3430) + 0.625(3430)$$

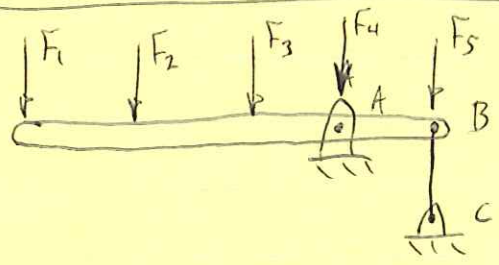
$$R_A = 6060 \text{ N} = 6.06 \text{ kN}$$

EQN. (1):

$$R_B = \frac{1}{2}(3430 + 3430 + 1.37 \times 10^4) - 6060 \text{ N}$$

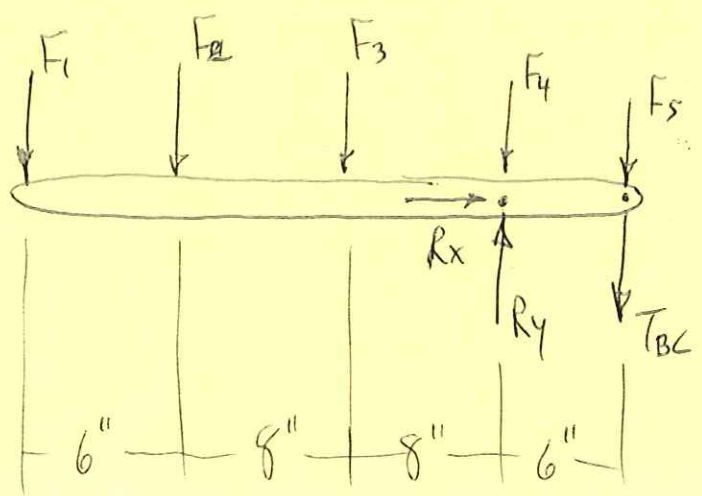
$$R_B = 4220 \text{ N} = 4.22 \text{ kN}$$

EXAMPLE PROB. 4.4



FIND REACTION AT A, TENSION IN CABLE BC.

FREE-BODY DIAGRAM OF BAR:



$$\sum F_x = 0 :$$

$$R_x = 0$$

$$\sum F_y = 0 :$$

$$R_y = F_1 + F_2 + F_3 + F_4 + F_5 + T_{BC}$$

$$R_y = 105 + T_{BC}$$

$$\sum M_A = 0 \quad +\curvearrowright$$

$$(22\text{ in})(15\text{ LB}) + (16\text{ in})(20\text{ LB}) + (8\text{ in})(35\text{ LB}) - (6\text{ in})(15\text{ LB})$$

$$- (6\text{ in})T_{BC} = 0$$

$$T_{BC} = 140\text{ LB}$$

$$R_y = 105 + 140 = 245\text{ LB}$$

EXX