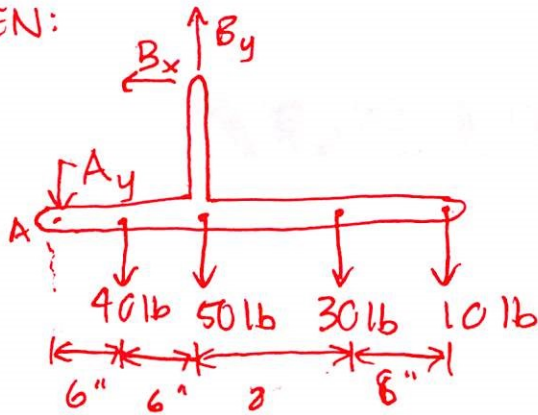


4.3 GIVEN:



FIND:  $A_y$ ,  $B_x$ ,  $B_y$  when  $a = 10$  in, 7 in

SOLUTION: a)  $\sum F_x = 0 = B_x$

$B_x = 0$

$$\sum F_y = -A_y + B_y - 40 \text{ lb} - 50 \text{ lb} - 30 \text{ lb} - 10 \text{ lb}$$

$$= -A_y + B_y - 130 \text{ lb} = 0$$

$$\sum M_A = -40 \text{ lb}(6'') - 50 \text{ lb}(12'') - 30 \text{ lb}(22'') - 10 \text{ lb}(30'')$$

$$+ B_x(\cancel{AB}) + B_y(12'')$$

$$= -240 - 600 - 660 - 300 + B_y(12')$$

$$1800 \text{ lb} \cdot \text{in} = 12'' \cdot B_y$$

$B_y = 150 \text{ lb}$

$$A_y = 150 \text{ lb} - 130 \text{ lb} = 20 \text{ lb}$$

$A_y = 20 \text{ lb}$

b)  $\sum M_A = -40 \text{ lb}(6'') - 50 \text{ lb}(12'') - 30 \text{ lb}(19'') - 10 \text{ lb}(27'')$

$$+ B_x(\cancel{AB}) + B_y(12'')$$

$$= -240 - 600 - 570 - 270 + 12 B_y$$

$B_y = 140 \text{ lb}$

$$A_y = 140 - 130 \text{ lb}$$

$A_y = 10 \text{ lb}$