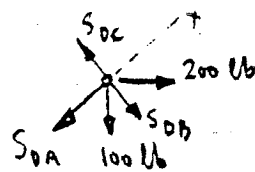


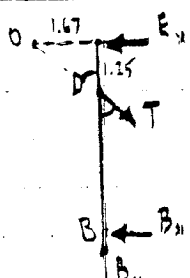
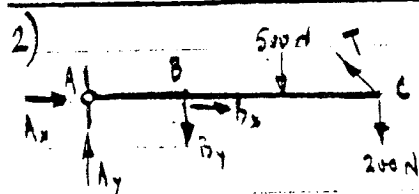
Equil. of joint E : $S_{DE} = 100 \text{ lb (T)}$

Equil. of joint D :



$$\sum F_x = 0 = 200 \cos 30^\circ - 100 \cos 60^\circ - S_{DA}$$

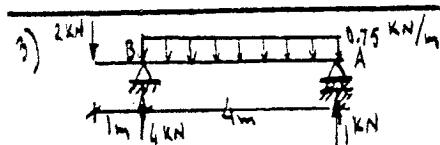
$$\Rightarrow S_{DA} = 123.2 \text{ lb, independent of Q}$$



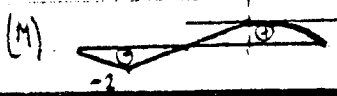
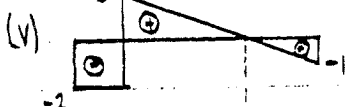
Entire frame : $(\sum M)_A = 0 = E_x \times 4.25 - 500 \times 3 - 200 \times 5$
 $\therefore E_x = 588.2 \text{ N}$

Member EDB : $(\sum M)_D = 0 = 588.2 \times 1.25 - B_x \times 3 \Rightarrow B_x = 245$
 $(\sum M)_B = 0 = 245 \times 4.25 - B_y \times 1.67 \Rightarrow B_y = 625$

Directions as shown



Reactions : $(\sum M)_A = 0 = 2 \times 5 + 4 \times 0.75 \times 2 - B \times 4 \Rightarrow B = 4 \text{ kN} \uparrow$
 $\sum F_y = 0 = A + B - 2 - 4 \times 0.75 \Rightarrow A = 1 \text{ kN} \uparrow$



M_{max} at point of zero shear

PLEASE, LEARN FROM YOUR MISTAKES!!!