

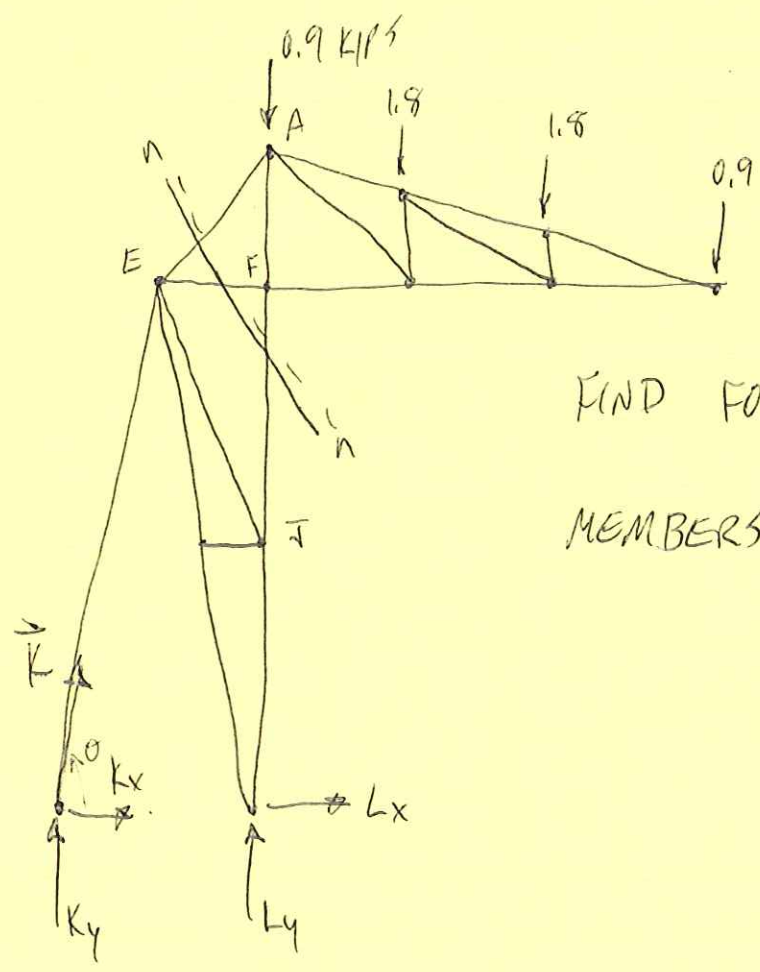
~~EXAMPLE 6.56~~ $\sum M_F = 0 \quad +\curvearrowright$

$-(2.4\text{m})(10.5\text{ kN}) + (2.4)(2) + (1.6)(4) + (0.8)(4)$

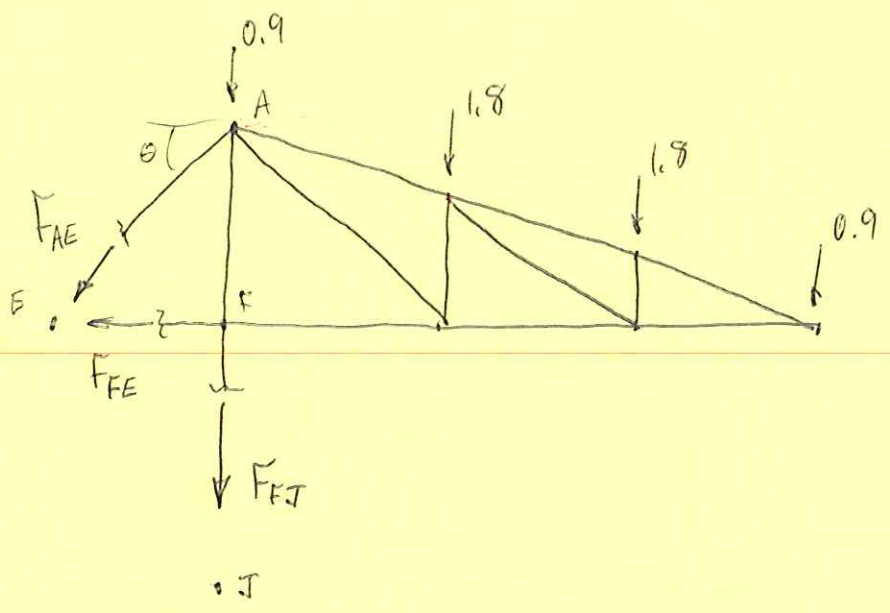
$-(0.4) F_{EG} = 0$

$F_{EG} = -27\text{ kN} \quad (\text{COMPRESSION})$

EXAMPLE PROB. 6.56



FIND FORCE IN
MEMBERS AE, EF, FJ



$$\theta = \tan^{-1}\left(\frac{9}{8}\right) = 48.4^\circ$$

$$\vec{F}_{AE} = (-\cos 48.4^\circ F_{AE}) \hat{i} + (-\sin 48.4^\circ F_{AE}) \hat{j} \quad \text{kips}$$

$$\vec{F}_{AE} = (-0.664 F_{AE}) \hat{i} + (-0.748 F_{AE}) \hat{j}$$

$$\sum F_x = 0:$$

$$-F_{FE} - 0.664 F_{AE} = 0$$

$$F_{FE} = -0.664 F_{AE} \quad \text{Eqn. (1)}$$

$$F_{AE} = -1.51 F_{FE} \quad \text{Eqn. (1)}$$

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

$$-(9\text{ft}) F_{FE} - (12)(1.8) - (26)(1.8) - (40)(0.9) = 0$$

$$F_{FE} = -11.6 \text{ KIPS (COMPRESSION)}$$

$$F_{AE} = -1.51(-11.6) = 17.5 \text{ KIPS (TENSION)}$$

$$\sum M_E = 0 \quad +\curvearrowright :$$

$$-(8 \text{ ft})(F_{FT}) - (8)(0.9) - (20)(1.8) - (34)(1.8) - (48)(0.9) = 0$$

$$\text{At } F_{FT} = -18.4 \text{ KIPS (COMPRESSION)}$$

HOMEWORK: #6

PROBS. 6.15, 6.49, 6.95, 6.145

IN-CLASS #7 = PROB. 6.1