<u>Given:</u>

1.2 kN (TYPICAL)
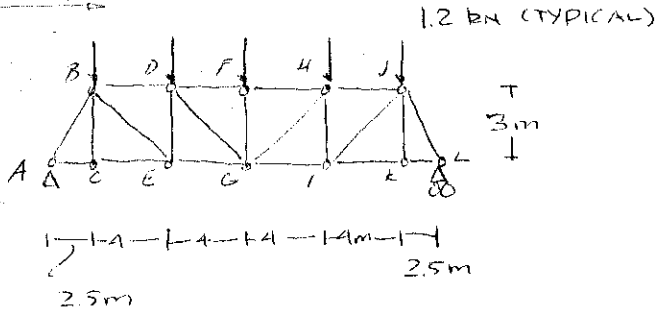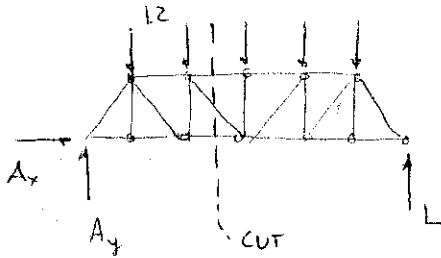

3m

2.5m

2.5m

<u>Find:</u> FORCES IN DF, DG, & EG

<u>Soln.</u>

<u>FBD WHOLE THING</u>

$+\rightarrow \Sigma F_x = 0 \qquad \underline{A_x = 0}$

$\circlearrowleft \Sigma M_A = 0$

$-(2.25)(1.2) - (6.25)(1.2) - (10.25)(1.2)$

$- (14.25)(1.2) - (18.25)(1.2)$

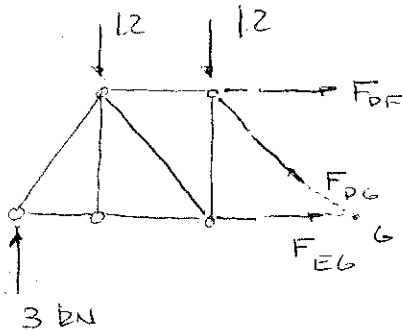$+ (20)(L) = 0 \qquad \underline{L = 3 kN}$

$\uparrow_+ \Sigma F_y = 0$

$A_y - 5*12 + L = 0 \qquad \underline{A_y = 3 kN}$ (COULD GET FROM SYM. VERT)

MAKE CUT AS SHOWN!

<u>FBD of LEFT SECTION</u>

$\circlearrowleft \Sigma M_G = 0$

$-(10.25)(3) + (8)(1.2) + (4)(1.2)$

$- (3)(F_{DF}) = 0$

$F_{DF} = -5.45 kN$

$\boxed{F_{DF} = 5.45 kN \; (C)}$

$\uparrow_+ \Sigma F_y = 0$

$3 - 1.2 - 1.2 - F_{DG}\left(\frac{3}{5}\right) = 0$

$\boxed{F_{DG} = 1 kN \; (T)}$

$+\rightarrow \Sigma F_x = 0$

$F_{EG} + F_{DG}\left(\frac{4}{5}\right) + F_{DF} = 0$

$\boxed{F_{EG} = 4.65 kN \; (T)}$