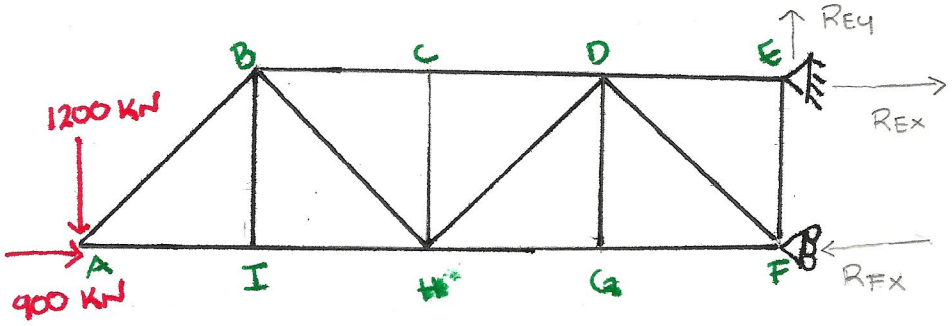
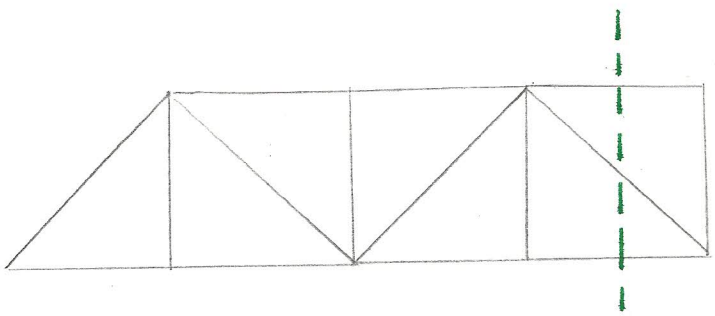
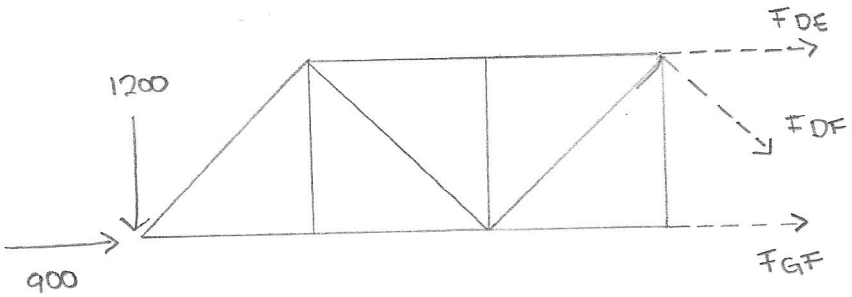


$\overset{+}{\circlearrowright}\Sigma M_E = 0$; $-1200(16) - 900(3) + R_{Fx}(3) = 0$; $\boxed{R_{Fx} = 7300\ KN}$

$\Sigma F_x = 0$; $+R_{Fx} + R_{Ex} + 900 = 0$; $\boxed{R_{Ex} = 6400\ KN}$

$\Sigma F_y = 0$; $-1200 + R_{Ey} = 0$; $\boxed{R_{Ey} = 1200\ KN}$





$\overset{+}{\circlearrowright}\Sigma M_D = 0$

$-1200(12) - 900(3) - F_{GF}(3) = 0$; $\boxed{F_{GF} = -5700\ KN}$ Compresión

$\Sigma F_y = 0$

$-1200 - \frac{3}{5} F_{DF} = 0$; $\boxed{F_{DF} = -2000\ KN}$ Compresión

$\Sigma F_x = 0$

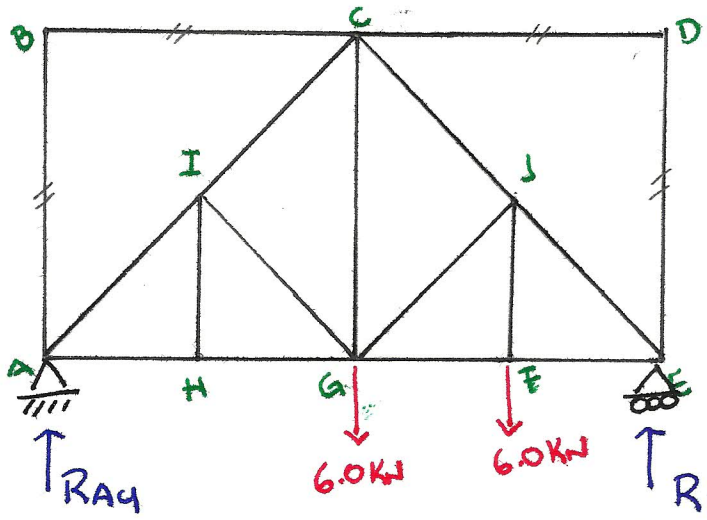
$900 + F_{DE} + F_{GF} + \frac{4}{5} F_{DF} = 0$;

$900 + F_{DE} - 5700 - \frac{4}{5}(2000) = 0$

$F_{DE} = -900 + 5700 + \frac{4}{5}(2000)$

$\boxed{= 6400\ KN}$

Tensión

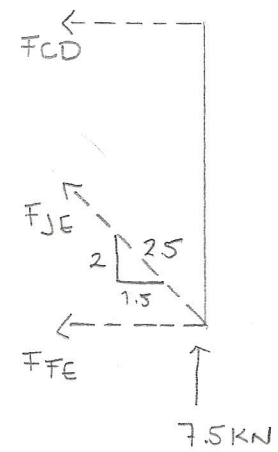


$\overset{+}{\circlearrowright}\sum M_E = 0$

$R_{Ay}(6) - 6(3) - 6(1.5) = 0$; $R_{Ay} = 4.5$ KN

$\sum F_y = 0$

$R_{Ay} + R_{Ey} - 12 = 0$; $R_{Ey} = 7.5$ KN



$\overset{+}{\circlearrowright}\sum M_E = 0$

$F_{CD}(4) = 0$; $F_{CD} = 0$

$\overset{+}{\circlearrowright}\sum M_D = 0$

$F_{FE}(4) + F_{JE}(4)\left(\frac{1.5}{2.5}\right) = 0$

$F_{FE}(4) + 2.4F_{JE} = 0$

$F_{FE} = -\frac{2.4F_{JE}}{4} = -0.6F_{JE}$ ... 1

$\sum F_y = 0$

$+ 7.5 + \frac{2}{2.5}F_{JE} = 0$

$F_{JE} = -\frac{7.5(2.5)}{2} = -9.38$ KN $= 9.38$ ↘ ... 2

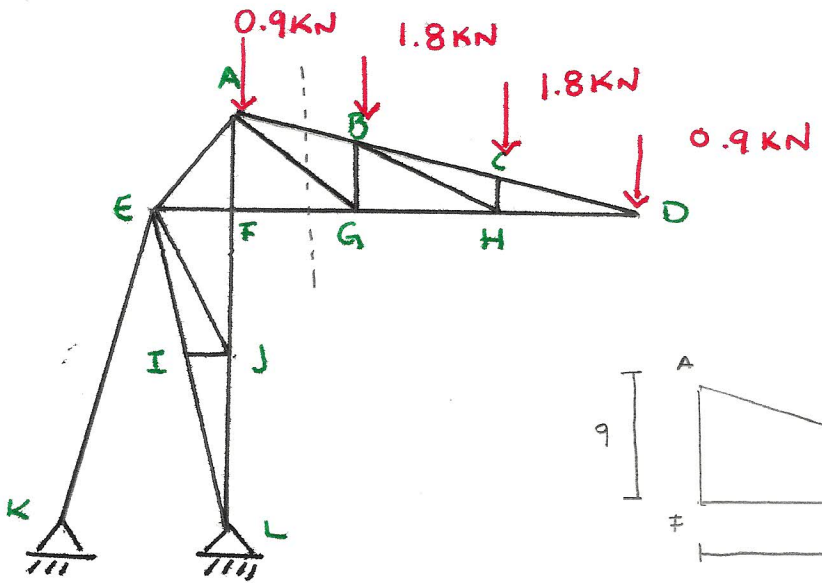
Sustituyendo 2 en 1

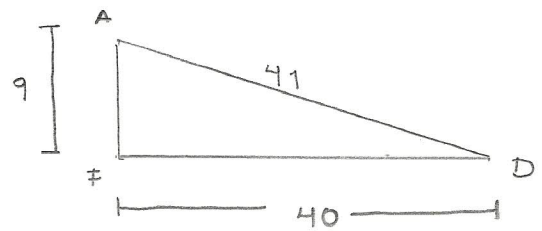
$F_{FE} = -0.6F_{JE}$

$= -0.6(-9.38) = 5.63$ KN

La sumatoria de fuerzas en cualquier nodo debe ser igual a cero, entonces analizando el nodo F para que se cumpla lo anterior las fuerzas F_{FE} y F_{FG} deben ser igoales.

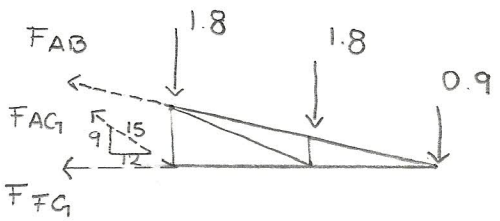
$F_{FG} = 5.63$ KN





$$\frac{9}{40} = \frac{x}{28}$$

$$x = 6.3\ m$$



$$\circlearrowright^{+} \Sigma M_G = 0$$

$$-F_{AB}\frac{40}{41}(6.3m) + 1.8(14) + 0.9(28m) = 0$$

$$\frac{252}{41} F_{AB} = 50.4$$

$$F_{AB} = \boxed{8.2\ KN}$$

$$\circlearrowright^{+} \Sigma M_D = 0$$

$$-\frac{40}{41} F_{AB}(6.3) + \frac{9}{41} F_{AB}(28) + F_{AG}\frac{9}{15}(28) - 1.8(28) - 1.8(14) = 0$$

$$F_{AG}(16.8) = 75.6$$

$$\boxed{F_{AG} = \frac{75.6}{16.8} = 4.5\ KN}$$

$$\Sigma F_x = 0$$

$$-\frac{40}{41} F_{AB} - F_{FG} - F_{AG}\frac{12}{15} = 0$$

$$F_{FG} = -\frac{40}{41}(8.2) - 4.5\left(\frac{12}{15}\right) = -11.6\ KN \quad \boxed{\rightarrow = 11.6\ KN}$$