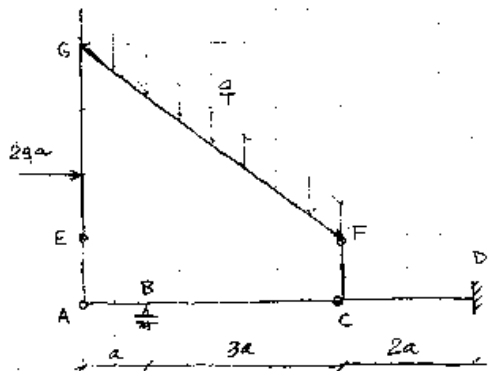
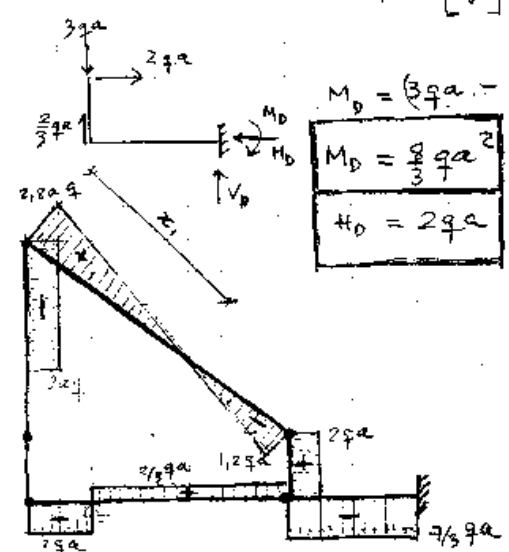


Ejercicio 2



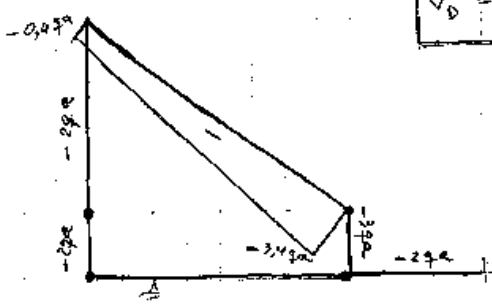
$[M_E = 0] \quad V_F \cdot 4a - 5qa \cdot 2a - 2qa \cdot a \rightarrow V_F = 3qa$
 $[V] \quad V_E + V_F = 5qa$
 $[H] \quad H_F = 2qa$

$[H] \quad H_C = 0$
 $[M_B = 0] \quad V_C \cdot 3a = 2qa \cdot a \rightarrow V_C = \frac{2}{3}qa$
 $[V] \quad 2qa + \frac{2}{3}qa = V_B \rightarrow V_B = \frac{8}{3}qa$



$M_D = (3qa - \frac{2}{3}qa) \cdot 2a - 2qa \cdot a$
 $M_D = \frac{8}{3}qa^2$
 $H_D = 2qa$

$V_D = 3qa - \frac{2}{3}qa = \frac{7}{3}qa$
 $V_D = \frac{7}{3}qa$

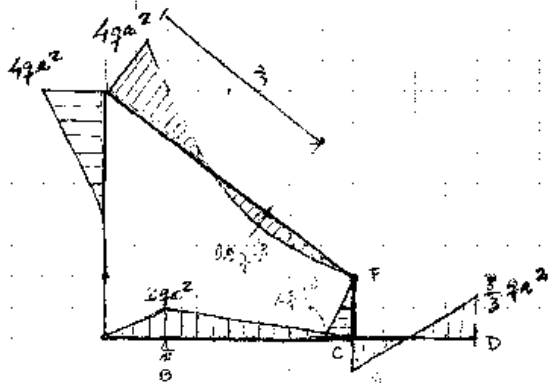


$V(G) = \frac{4}{5} \cdot 2qa + \frac{3}{5} \cdot 2qa = \frac{14}{5}qa$

$V(F) = -\frac{4}{5} \cdot 3qa + \frac{3}{5} \cdot 2qa = -\frac{6}{5}qa$

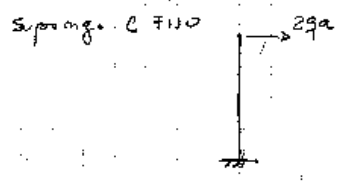
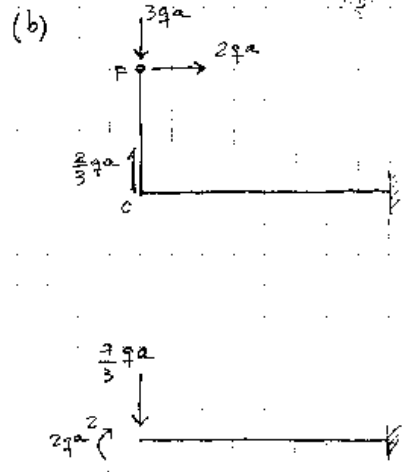
$N(G) = \frac{3}{5} \cdot 2qa - \frac{4}{5} \cdot 2qa = -\frac{2}{5}qa = -0,4qa$

$N(F) = -\frac{3}{5} \cdot 3qa - \frac{4}{5} \cdot 2qa = -\frac{17}{5}qa = -3,4qa$

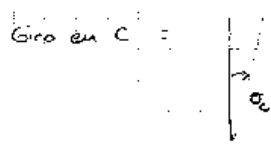


$$\frac{2.8 + 1.2}{2.8} = \frac{5a}{x_1} \quad x_1 = \frac{5a}{4} \cdot \frac{14}{8} = \frac{7}{2}a$$

$$M(x_1) = 4qa^2 - \frac{14}{5}qa \cdot \frac{7}{2}a \cdot \frac{1}{2} = -0.9qa^2$$



$$\delta_H^1 = \frac{2qa \cdot a^3}{3EI} = \frac{2qa^4}{3EI}$$



$$\delta_H^2 = \theta_c \cdot a = -\frac{2qa^4}{3EI}$$

$$\theta_c^1 = \frac{\frac{7}{3}qa^2 \cdot 4a^2}{2EI}$$

$$\theta_c^2 = \frac{2qa^2 \cdot 2a}{EI}$$

$$\theta_c = \frac{2qa^3}{3EI}$$

$$\delta_V^1 = \frac{7}{3}qa \cdot 8a^3 + \frac{56qa^4}{9EI}$$

$$\delta_V^2 = \frac{2qa^2 \cdot 4a^2}{2EI} = \frac{4qa^4}{EI}$$

$$\delta_V = \frac{20}{9}qa^4$$

$$\delta_H = 0$$

$$\delta_V = \frac{20}{9}qa^4$$