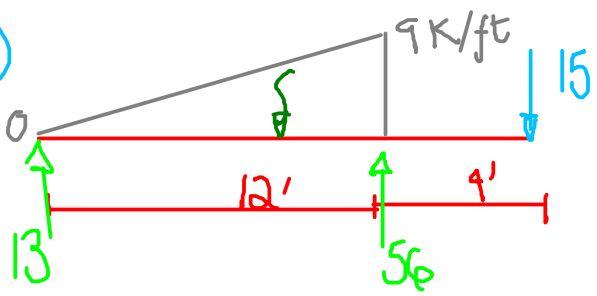


3-11 (A)



$$m = 9/12 = 3/4$$

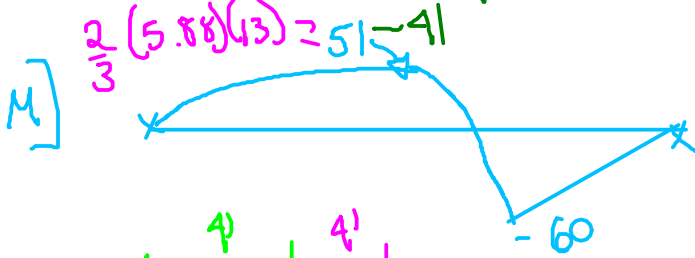
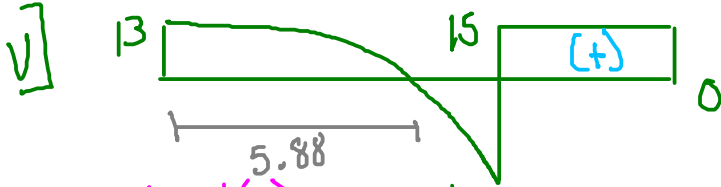
$$h = \frac{3}{4}x$$

$$A = \frac{1}{2}(x)\left(\frac{3}{4}x\right)$$

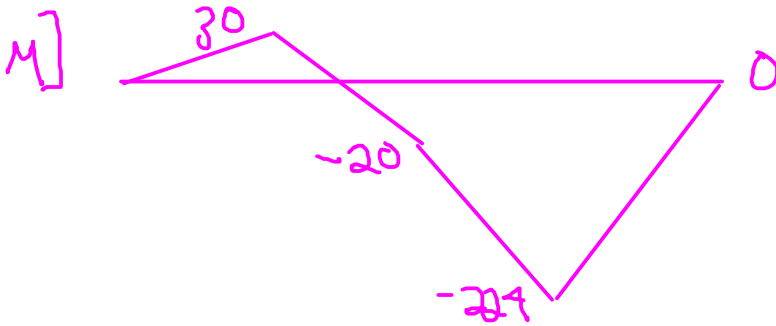
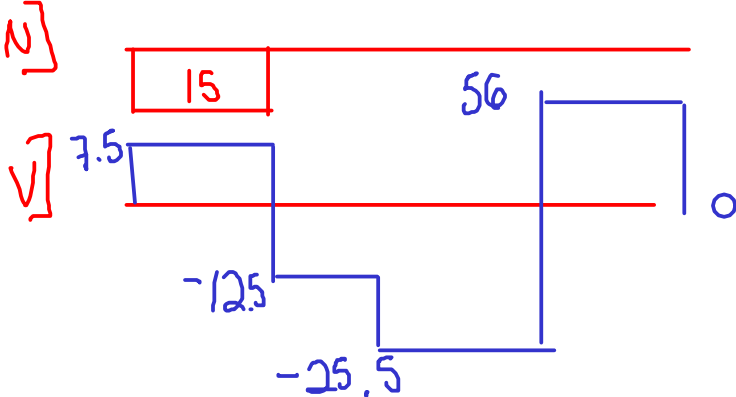
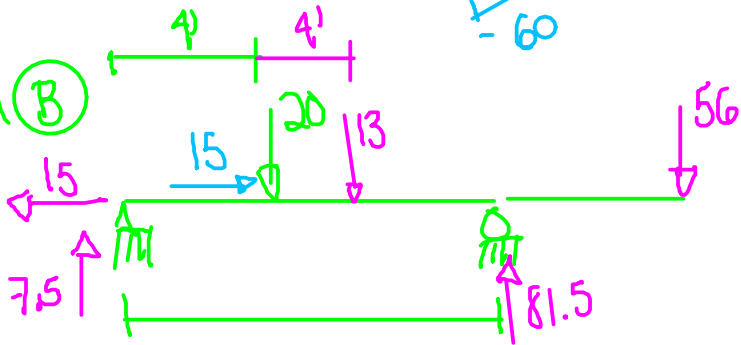
$$A = \frac{3}{8}x^2$$

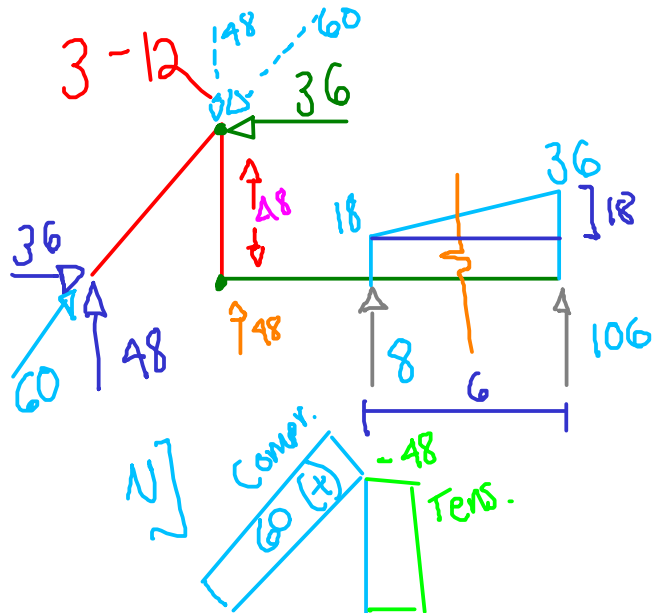
$$13 = \frac{3}{8}x^2$$

$$x = 5.88$$



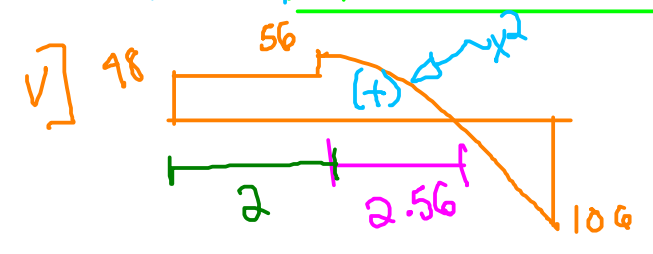
3-11 (B)



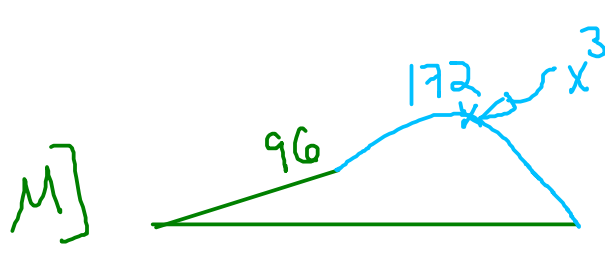


$x(18)$
 $\frac{1}{2} \times (3x)$

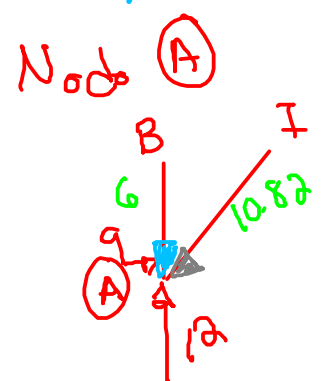
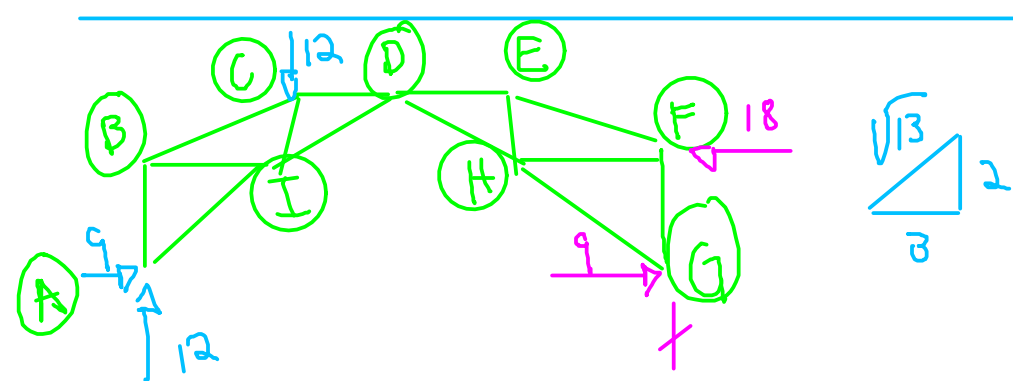
$m = \frac{18}{6} \rightarrow 3$



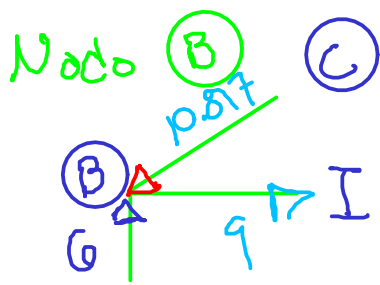
$(56 - 18x - 1.5x^2 = 0) \dots (*)$
 $\frac{18 \pm \sqrt{(-18)^2 - 4(-1.5)(56)}}{2(-1.5)}$
 $\rightarrow x_1 = -14.56$
 $x_2 = 2.56$



$\int_0^{2.56} (56 - 18x - 1.5x^2) dx + M_0$
 $56x - 9x^2 - 0.5x^3 \Big|_0^{2.56} + 96$
 $= 172$



$\Sigma F_x = 0 = 9 - F_{AI} \left(\frac{3}{\sqrt{13}}\right) = 0$
 $\rightarrow F_{AI} = 10.82$ (Compr.)
 $\Sigma F_y = 12 - F_{AI} \left(\frac{2}{\sqrt{13}}\right) - F_{AB} = 0$
 $\rightarrow F_{AB} = 6$ (Compr.)



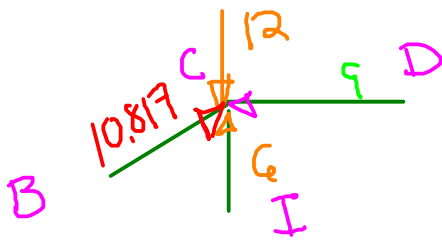
$$\sum F_y = G - F_{BC} \left(\frac{2}{\sqrt{13}} \right) = 0$$

$$\hookrightarrow F_{BC} = 10.817 \text{ (Compr.)}$$

$$\sum F_x = -F_{BC} \left(\frac{3}{\sqrt{13}} \right) + F_{BI} = 0$$

$$\hookrightarrow F_{BI} = 9 \text{ Tens.}$$

Nodo (C)



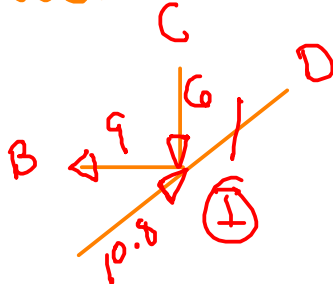
$$\sum F_x = 10.817 \left(\frac{3}{\sqrt{13}} \right) - F_{CD} = 0$$

$$\hookrightarrow F_{CD} = 9 \text{ Compr.}$$

$$\sum F_y = -12 + 10.817 \left(\frac{2}{\sqrt{13}} \right) + F_{IC} = 0$$

$$F_{IC} = 6 \text{ Compr.}$$

Nodo (I)

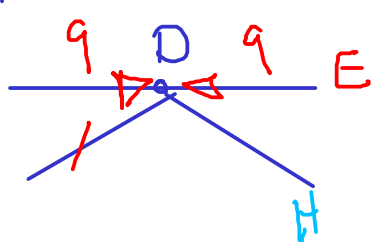


$$\sum F_x = 10.8 \left(\frac{3}{\sqrt{13}} \right) - 9 = 0 \checkmark$$

$$\sum F_y = 10.8 \left(\frac{2}{\sqrt{13}} \right) - 6 = 0 \checkmark$$

A

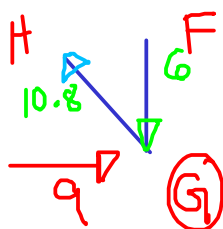
Nodo (D)



$$\sum F_y \rightarrow F_{DG} = 0$$

$$\sum F_x \rightarrow F_{ED} = 9 \text{ Compr.}$$

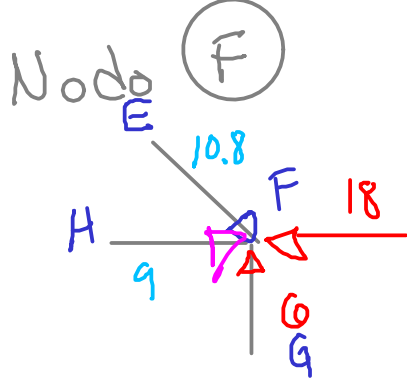
Nodo (G)



$$\sum F_x = 0 = 9 - F_{HG} \left(\frac{3}{\sqrt{13}} \right) = 0$$

$$\hookrightarrow F_{HG} = 10.8 \text{ Tens.}$$

$$\sum F_y = 10.8 \left(\frac{2}{\sqrt{13}} \right) - F_{FG} = 0 \rightarrow F_{FG} = 6 \text{ Compr.}$$



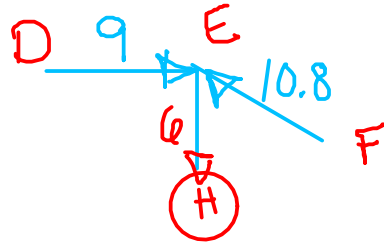
$$\sum F_y = 6 - F_{EF} \left(\frac{2}{\sqrt{13}}\right) = 0$$

$$\hookrightarrow F_{EF} = \underline{10.8 \text{ Compr.}}$$

$$\sum F_x = 10.8 \left(\frac{3}{\sqrt{13}}\right) + F_{HF} - 18 = 0$$

$$F_{HF} = \underline{9 \text{ Compr.}}$$

Node (E)

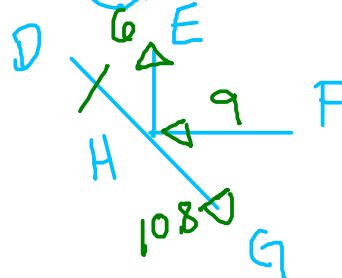


$$\sum F_y = 10.8 \left(\frac{2}{\sqrt{13}}\right) - F_{EH} = 0$$

$$\hookrightarrow F_{EH} = \underline{6 \text{ (Tens.)}}$$

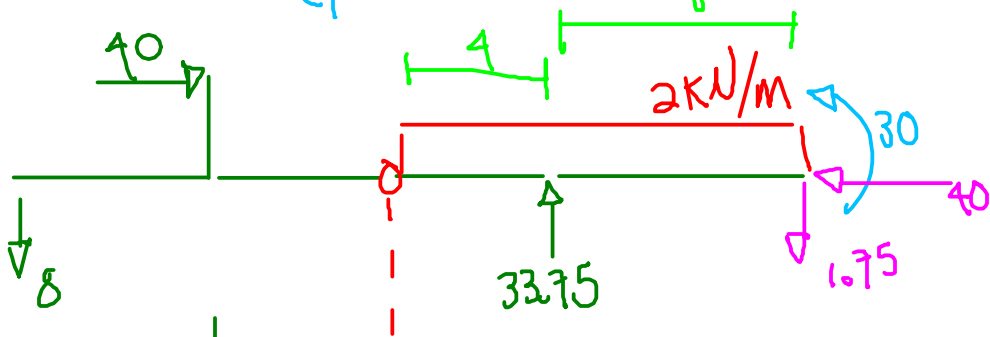
$$\sum F_x = 9 - 10.8 \left(\frac{3}{\sqrt{13}}\right) = \underline{0} \checkmark$$

Node (H)



$$\sum F_x = 10.8 \left(\frac{3}{\sqrt{13}}\right) - 9 = \underline{0} \checkmark$$

$$\sum F_y = -10.8 \left(\frac{2}{\sqrt{13}}\right) + 6 = \underline{0} \checkmark$$



N] Compr. (40)

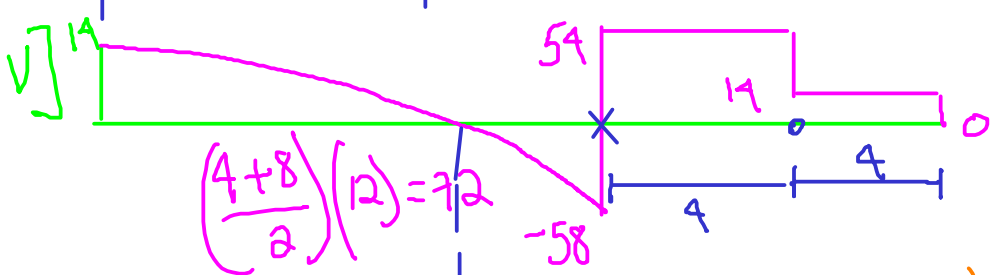
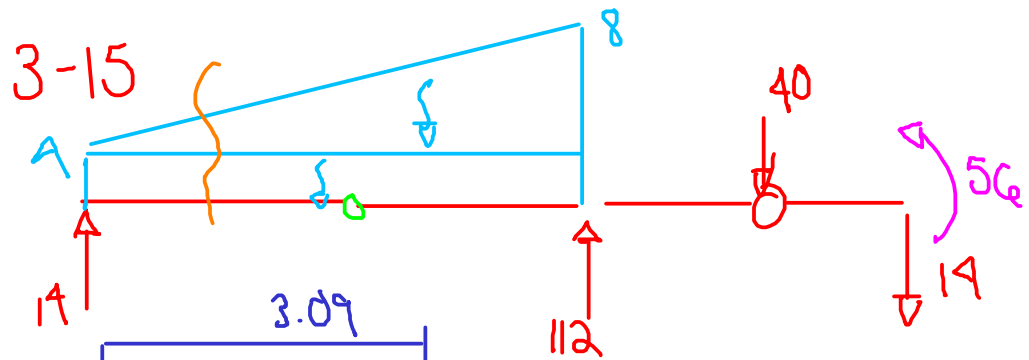
V] 6 40 17.75 1.75

M] 18 80 16 30

$$* A = \left(\frac{17.75 + 1.75}{2}\right) \times 8 = 78$$

$$80 - 48 = 32$$

$$\left(\frac{B+b}{2}\right) h = \frac{16+8}{2} (4) = 48$$



$$\left(\frac{4+8}{2}\right)(12) = 72$$

$$\frac{-4 \pm \sqrt{4^2 - 4\left(\frac{1}{6}\right)(-14)}}{2\left(\frac{1}{6}\right)}$$

$$4(x) + \frac{1}{2}(x)\left(\frac{1}{12}x\right) = \frac{x^2}{6} + 4x$$

$$\frac{x^2}{6} + 4x = 14$$

$$x = 3.09$$

$$x = -27.7$$

$$M] \int_0^{3.09} 8 dx = -\frac{x^3}{18} - 2x^2 + 14x \Big|_0^{3.09} = 22.52$$

