

#1: [CaseMode := Sensitive, InputMode := Word]

#2: [X1 :=, Y1 :=, Y4 :=]

**Equilibrio externo:**

#3:

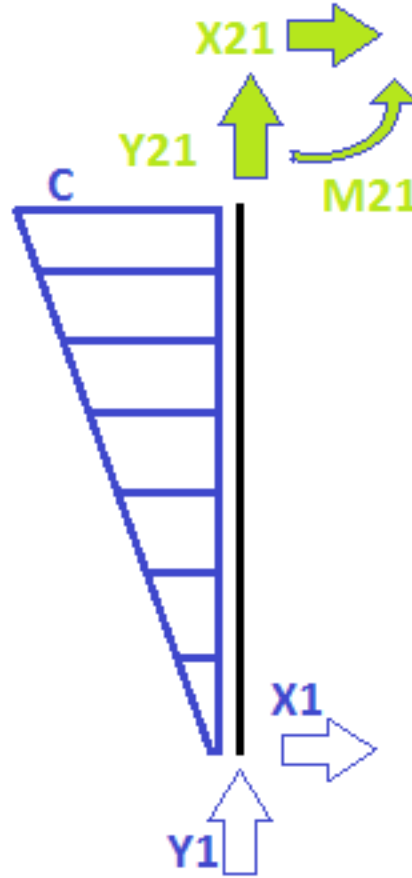
$$\begin{bmatrix} X1 + \frac{2.8}{2} = 0 \\ Y1 + Y4 - 3.6 - 4 = 0 \\ Y4 \cdot 4 - \frac{2.8}{2} \cdot \frac{2}{3} \cdot 8 - 3.6 \cdot 3 - 4 \cdot 6 - 8 = 0 \end{bmatrix}$$

#4:

$$\left[ X1 := -8, Y1 := -\frac{61}{6}, Y4 := \frac{193}{6} \right]$$

#5: [X1 = -8 ^ Y1 = -10.16666666 ^ Y4 = 32.16666666]

**Diagramas de cuerpo libre por cada elemento:**



#6:  $[x21 :=, y21 :=, m21 :=]$

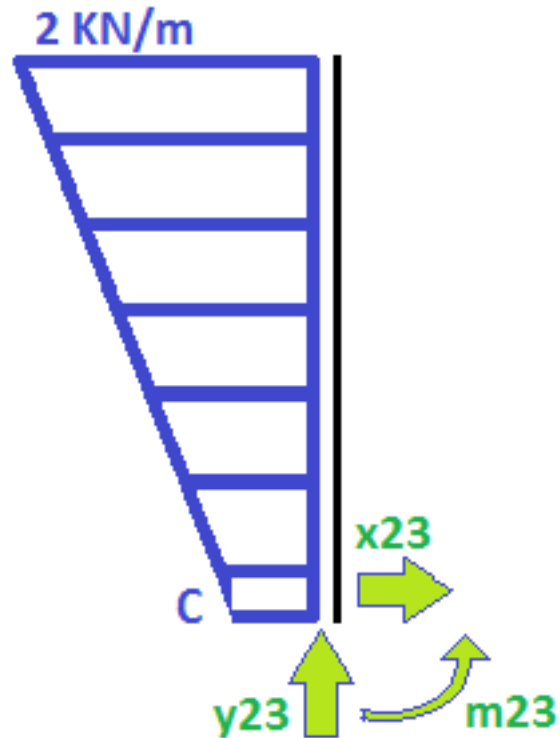
#7:  $\frac{2}{8} = \frac{c}{5}$

#8:  $c = 1.25$

#9: 
$$\begin{bmatrix} X1 + x21 + \frac{1.25 \cdot 5}{2} = 0 \\ Y1 + y21 = 0 \\ -\frac{1.25 \cdot 5}{2} \cdot \frac{2}{3} \cdot 5 + m21 - x21 \cdot 5 = 0 \end{bmatrix}$$

#10: 
$$\left[ m21 := \frac{835}{24}, x21 := \frac{39}{8}, y21 := \frac{61}{6} \right]$$

#11:  $[m21 = 34.79166666 \wedge x21 = 4.875 \wedge y21 = 10.16666666]$



#12:  $[x_{23} :=, y_{23} :=, m_{23} :=]$

#13: 
$$\begin{bmatrix} x_{23} + \frac{2 + 1.25}{2} \cdot 3 = 0 \\ y_{23} = 0 \\ m_{23} - \frac{2 + 1.25}{2} \cdot 3 \cdot \frac{3}{3} \cdot \frac{2 \cdot 2 + 1.25}{2 + 1.25} = 0 \end{bmatrix}$$

#14: 
$$\left[ m_{23} := \frac{63}{8}, x_{23} := -\frac{39}{8}, y_{23} := 0 \right]$$

#15:  $[m_{23} = 7.875 \wedge x_{23} = -4.875 \wedge y_{23} = 0]$

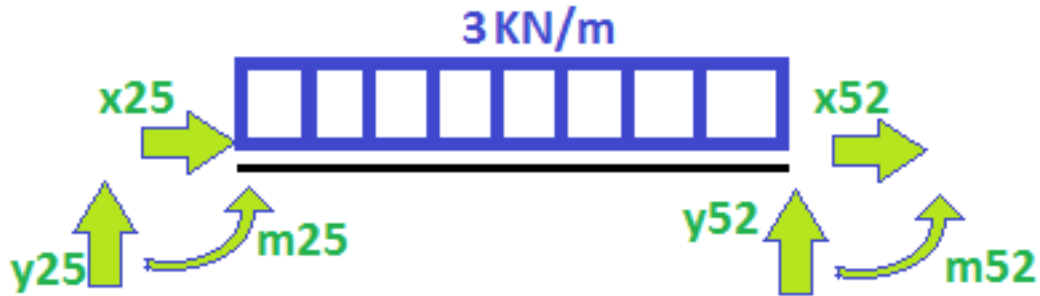
**Nudo 2:**

#16:  $[x_{25} :=, y_{25} :=, m_{25} :=]$

#17: 
$$\begin{bmatrix} x_{25} + x_{21} + x_{23} = 0 \\ y_{25} + y_{21} + y_{23} = 0 \\ m_{25} + m_{21} + m_{23} = -8 \end{bmatrix}$$

#18: 
$$\left[ m_{25} := -\frac{152}{3}, x_{25} := 0, y_{25} := -\frac{61}{6} \right]$$

#19: 
$$[m_{25} = -50.66666666 \wedge x_{25} = 0 \wedge y_{25} = -10.16666666]$$



#20: 
$$[x_{52} :=, y_{52} :=, m_{52} :=]$$

#21: 
$$\begin{bmatrix} x_{25} + x_{52} = 0 \\ y_{25} + y_{52} - 3 \cdot 4 = 0 \\ m_{25} + m_{52} + y_{52} \cdot 4 - 3 \cdot 4 \cdot 2 = 0 \end{bmatrix}$$

#22: 
$$\left[ m_{52} := -14, x_{52} := 0, y_{52} := \frac{133}{6} \right]$$

#23: 
$$[m_{52} = -14 \wedge x_{52} = 0 \wedge y_{52} = 22.16666666]$$

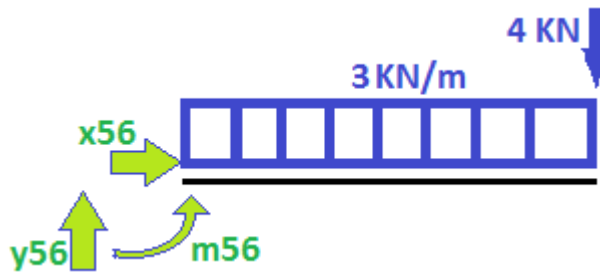


#24:  $[x_{54} :=, y_{54} :=, m_{54} :=]$

#25: 
$$\begin{bmatrix} x_{54} = 0 \\ y_{54} + Y_4 = 0 \\ m_{54} - x_{54} \cdot 5 = 0 \end{bmatrix}$$

#26: 
$$\left[ m_{54} := 0, x_{54} := 0, y_{54} := -\frac{193}{6} \right]$$

#27:  $[m_{54} = 0 \wedge x_{54} = 0 \wedge y_{54} = -32.166666666]$



#28:  $[x_{56} :=, y_{56} :=, m_{56} :=]$

#29: 
$$\begin{bmatrix} x_{56} = 0 \\ y_{56} - 3 \cdot 2 - 4 = 0 \\ m_{56} - 3 \cdot 2 \cdot 1 - 4 \cdot 2 = 0 \end{bmatrix}$$

#30:  $[m_{56} := 14, x_{56} := 0, y_{56} := 10]$

**Chequeo en el nudo 5:**

#31: 
$$\begin{bmatrix} x_{54} + x_{52} + x_{56} = 0 \\ y_{54} + y_{52} + y_{56} = 0 \\ m_{54} + m_{52} + m_{56} = 0 \end{bmatrix}$$

#32: 
$$\begin{bmatrix} \text{true} \\ \text{true} \\ \text{true} \end{bmatrix}$$