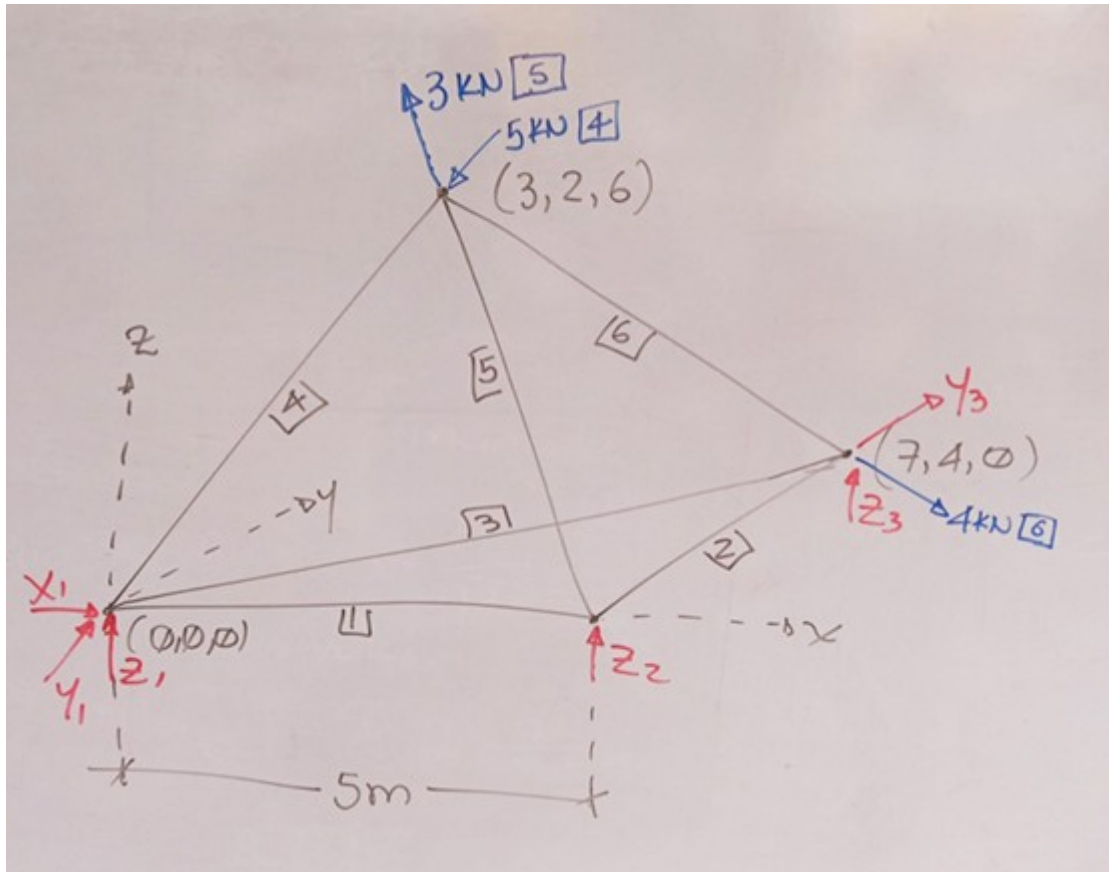




#1: [CaseMode := Sensitive, InputMode := Word]

Longitudes de los elementos:

#2:
$$[L1 := 5, L2 := 4, L3 := \sqrt{(5^2 + 4^2)}, L4 := \sqrt{(3^2 + 2^2 + 6^2)}, L5 := \sqrt{((5-3)^2 + 2^2 + 6^2)}, L6 := \sqrt{((7-3)^2 + (4-2)^2 + 6^2)}]$$

#3: $[L1 := 5, L2 := 4, L3 := 6.403124237, L4 := 7, L5 := 6.63324958, L6 := 7.483314773]$

#4: $[L1 := 5, L2 := 4, L3 := \sqrt{41}, L4 := 7, L5 := 2 \cdot \sqrt{11}, L6 := 2 \cdot \sqrt{14}]$

Descomposición de fuerzas puntuales:

$$\#5: \begin{bmatrix} F3x := 3 \cdot \frac{5-3}{L5} & F3y := 3 \cdot \frac{2}{L5} & F3z := 3 \cdot \frac{6}{L5} \\ F4x := 4 \cdot \frac{7-3}{L6} & F4y := 4 \cdot \frac{4-2}{L6} & F4z := 4 \cdot \frac{6}{L6} \\ F5x := 5 \cdot \frac{3}{L4} & F5y := 5 \cdot \frac{2}{L4} & F5z := 5 \cdot \frac{6}{L4} \end{bmatrix}$$

$$\#6: \begin{bmatrix} F3x := 0.9045340337 & F3y := 0.9045340337 & F3z := 2.713602101 \\ F4x := 2.138089935 & F4y := 1.069044967 & F4z := 3.207134902 \\ F5x := 2.142857142 & F5y := 1.428571428 & F5z := 4.285714285 \end{bmatrix}$$

$$\#7: \begin{bmatrix} F3x := \frac{3 \cdot \sqrt{11}}{11} & F3y := \frac{3 \cdot \sqrt{11}}{11} & F3z := \frac{9 \cdot \sqrt{11}}{11} \\ F4x := \frac{4 \cdot \sqrt{14}}{7} & F4y := \frac{2 \cdot \sqrt{14}}{7} & F4z := \frac{6 \cdot \sqrt{14}}{7} \\ F5x := \frac{15}{7} & F5y := \frac{10}{7} & F5z := \frac{30}{7} \end{bmatrix}$$

Ecuaciones de equilibrio estático:

[$\Sigma F_x=0$;
 $\Sigma F_y=0$;
 $\Sigma F_z=0$;
 $\Sigma M_x=0$ respecto al nudo 1;
 $\Sigma M_y=0$ respecto al nudo 1;
 $\Sigma M_z=0$ respecto al nudo 1]

$$\#8: \begin{bmatrix} X1 - F3x + F4x - F5x = 0 \\ Y1 + Y3 + F3y + F4y - F5y = 0 \\ Z1 + Z2 + Z3 + F3z - F4z - F5z \\ Z3 \cdot 4 - F4z \cdot 4 = 0 \\ -Z2 \cdot 5 - Z3 \cdot 7 - F3x \cdot 6 - F3z \cdot 3 + F4z \cdot 7 = 0 \\ Y3 \cdot 7 + F3x \cdot 2 + F3y \cdot 3 - F4x \cdot 4 + F4y \cdot 7 = 0 \end{bmatrix}$$

$$\#9: \begin{bmatrix} X1 = \frac{3 \cdot \sqrt{11}}{11} - \frac{4 \cdot \sqrt{14}}{7} + \frac{15}{7} \wedge Y1 = -\frac{6 \cdot \sqrt{11}}{77} - \frac{16 \cdot \sqrt{14}}{49} + \frac{10}{7} \wedge Y3 = \frac{2 \cdot \sqrt{14}}{49} - \end{bmatrix}$$

$$\left[\frac{15 \cdot \sqrt{11}}{77} \wedge Z1 = \frac{30}{7} \wedge Z2 = - \frac{9 \cdot \sqrt{11}}{11} \wedge Z3 = \frac{6 \cdot \sqrt{14}}{7} \right]$$

#10: [X1 = 0.9093012412 $\wedge$ Y1 = -0.05163254409 $\wedge$ Y3 = -0.4933750287 $\wedge$ Z1 = 4.285714285 $\wedge$ Z2 = -2.713602101 $\wedge$ Z3 = 3.207134902]