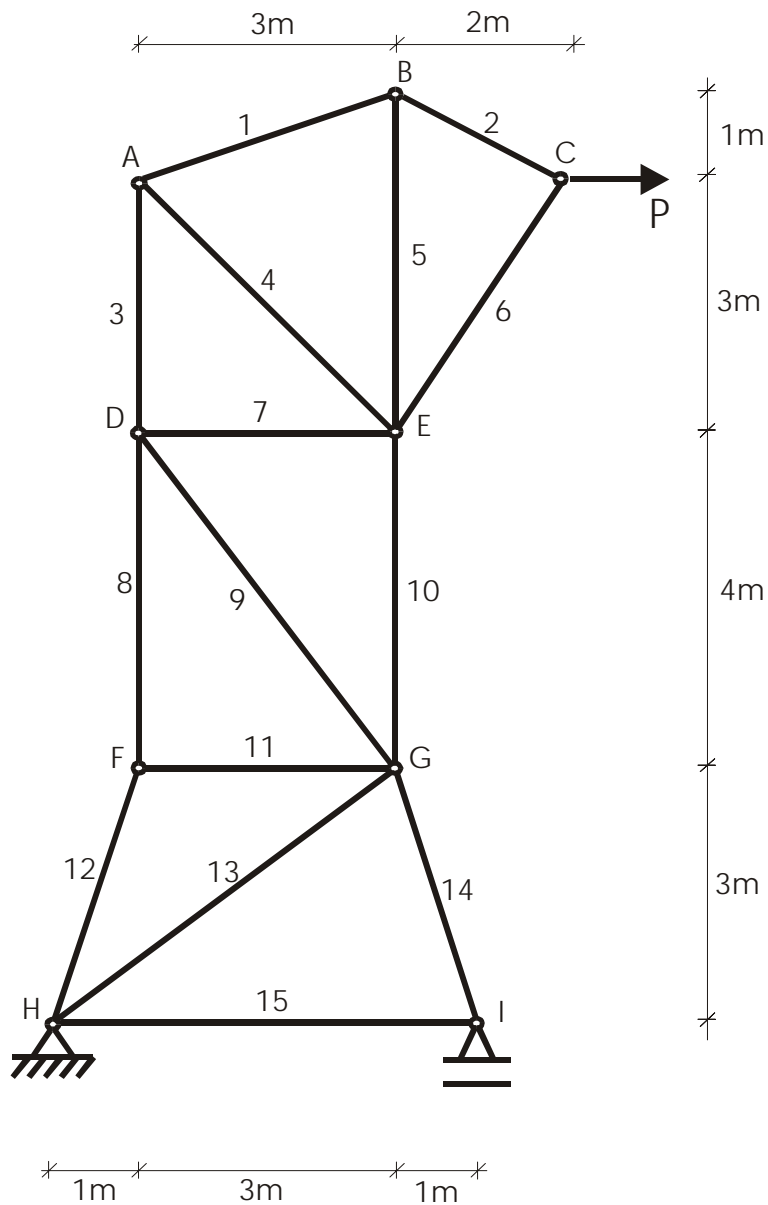


NºUSP: \_\_\_\_\_ Nome: \_\_\_\_\_

**Questão 2 (3,0)**

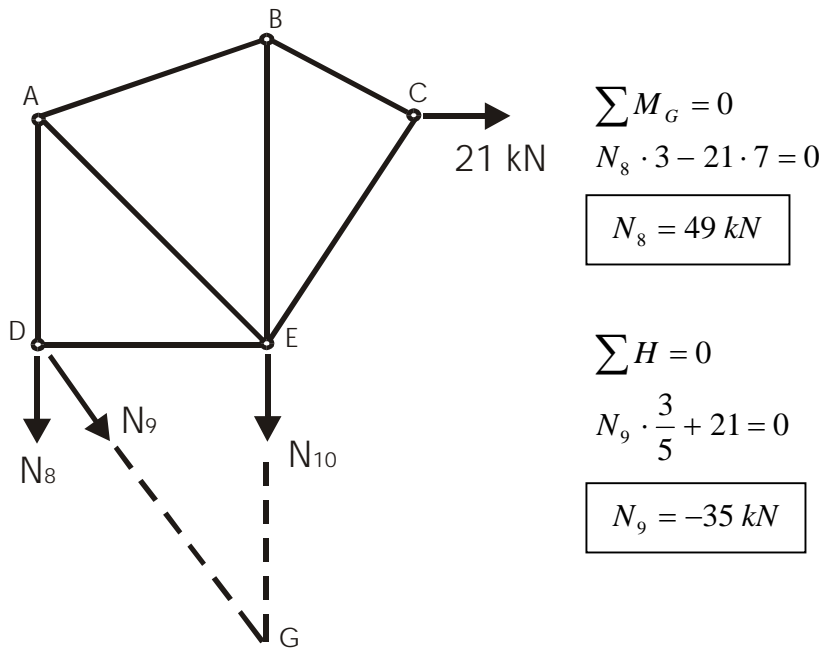
Na estrutura da figura, solicitada pela carga horizontal no nó C, calcule os esforços nas barras 3, 7, 8 e 9, utilizando os métodos de Ritter e do equilíbrio dos nós.

$P = 21 \text{ kN}$



Solução:

Corte de Ritter:



$$\sum M_G = 0$$
$$N_8 \cdot 3 - 21 \cdot 7 = 0$$

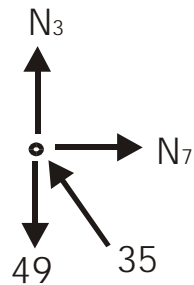
$$N_8 = 49 \text{ kN}$$

$$\sum H = 0$$

$$N_9 \cdot \frac{3}{5} + 21 = 0$$

$$N_9 = -35 \text{ kN}$$

Equilíbrio do nó D:



$$\sum V = 0$$

$$N_3 - 49 + 35 \cdot \frac{4}{5} = 0$$

$$N_3 = 21 \text{ kN}$$

$$\sum H = 0$$

$$N_7 - 35 \cdot \frac{3}{5} = 0$$

$$N_7 = 21 \text{ kN}$$