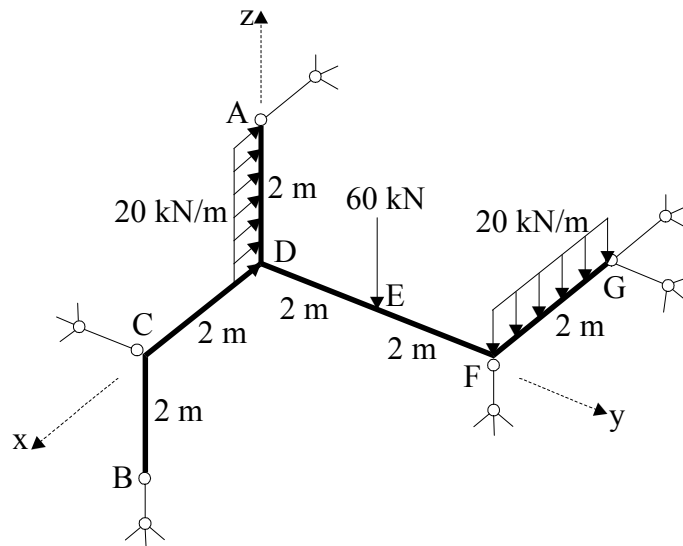
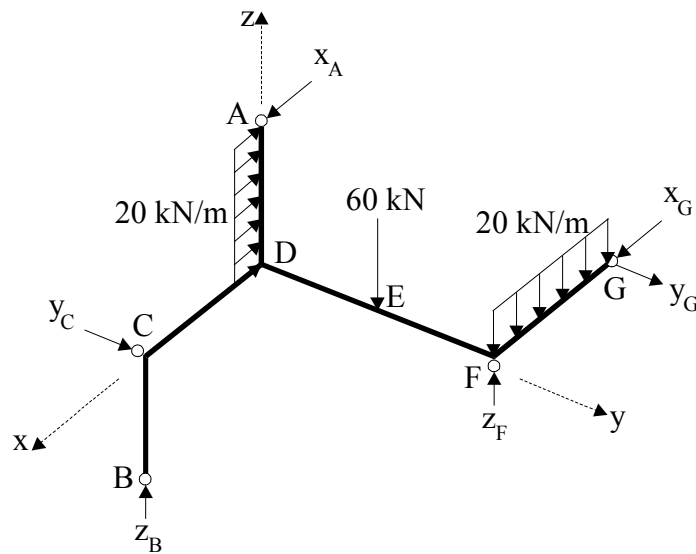


1ª QUESTÃO - 1ª PROVA DE 1991 - (3,0)

Determinar as reações de vínculo da estrutura da figura.



Resolução:



$$\sum F_x = 0 \implies x_A - 20 \cdot 2 + x_G = 0$$

$$\sum F_y = 0 \implies y_C + y_G = 0$$

$$\sum F_z = 0 \implies z_B - 60 + z_F - 20 \cdot 2 = 0$$

$$(\sum M_x)_A = 0 \implies -60 \cdot 2 + z_F \cdot 4 - 40 \cdot 4 = 0$$

$$\therefore x_A = 70 \text{ kN}$$

$$z_B = 30 \text{ kN}$$

$$y_C = -30 \text{ kN}$$

$$z_F = 70 \text{ kN}$$

$$(\Sigma My)_A = 0 \implies -z_B * 2 + x_A * 2 - 40 * 1 - 40 * 1 = 0$$

$$(\Sigma Mz)_A = 0 \implies y_C * 2 - x_G * 4 - y_G * 2 = 0$$

$$x_G = -30 \text{ kN}$$

$$y_G = 30 \text{ kN}$$