

④

Datos

$$m_{\text{perna}} = 15 \text{ kg}$$

$$d_{\text{perna}} = 35 \text{ cm} = 0.35 \text{ m}$$

$$m_{\text{contrapeso}} = ?$$

$$d_{\text{contrapeso}} = 80.5 \text{ cm} = 0.805 \text{ m}$$

Operaci3n:

$$\vec{M} = \vec{r} \times \vec{F} \quad | \quad \sum M = 0$$

$$\vec{M}_{\text{perna}} + \vec{M}_{\text{contrapeso}} = 0$$

$$15 \cdot 9.8 \cdot 0.35 = m_{\text{con.}} \cdot 9.8 \cdot 0.805$$

$$m_{\text{con}} = \boxed{6.52 \text{ kg}}$$

5) Datos

$$m_{\text{bola}} = 5 \text{ kg}$$

$$d_{\text{bola}} = 35 \text{ cm} = 0.35 \text{ m}$$


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$$m_{\text{ant.}} = 2 \text{ kg}$$

$$d_{\text{CG ant.}} = 15 \text{ cm} = 0.15 \text{ m}$$


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$$F_m ?$$

$$d_{F_m} = 5 \text{ cm} = 0.05 \text{ m}$$

Operaciones

$$\vec{M} = \vec{r} \times \vec{F} \quad \vdots \quad \sum M = 0$$

$$\vec{M}_{F_m} + \vec{M}_{\text{bola}} + \vec{M}_{\text{ant}} = 0$$

$$F_m \cdot 0.05 = (5 \cdot 9.8 \cdot 0.35) + (2 \cdot 9.8 \cdot 0.15)$$

$$F_m = 401.8 \text{ N}$$

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## Operacións

### Datos

$$m_{\text{bola}} = 7'5 \text{ kg}$$

$$d_{\text{bola}} = 0'3 \text{ m}$$

$$m_{\text{ant}} = 2'5 \text{ kg}$$

$$d_{\text{ant}} = 0'12 \text{ m}$$

$$F_m ?$$

$$d = 0'025 \text{ m}$$

$$F_m \cdot 0'025 = (7'5 \cdot 9'80'3) + (2'5 \cdot 9'8 \cdot 0'12)$$

$$F_m = 999'6 \text{ N}$$

⑧ Datos

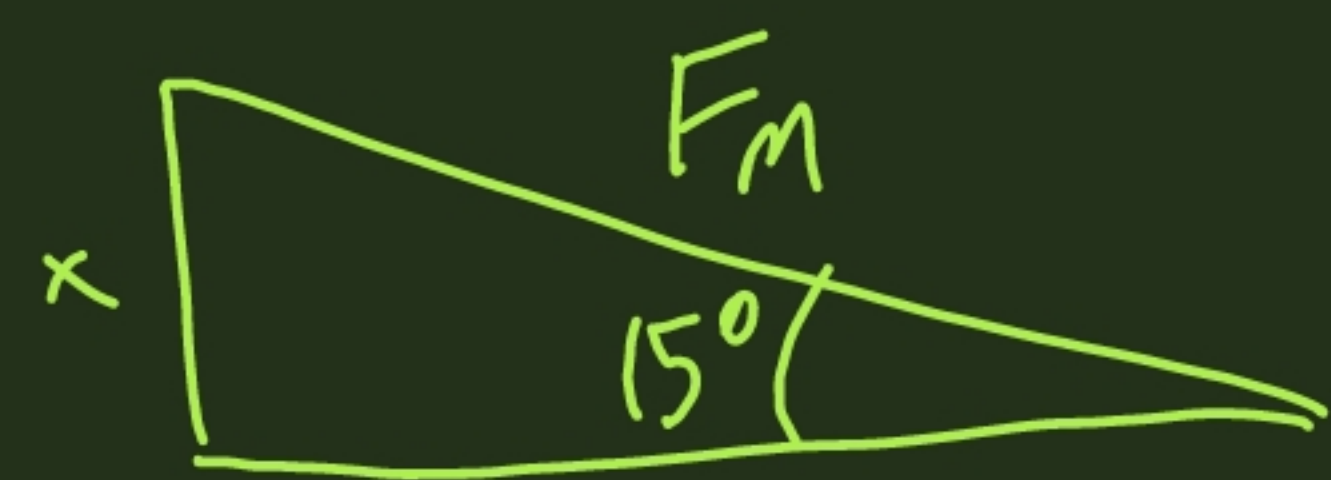
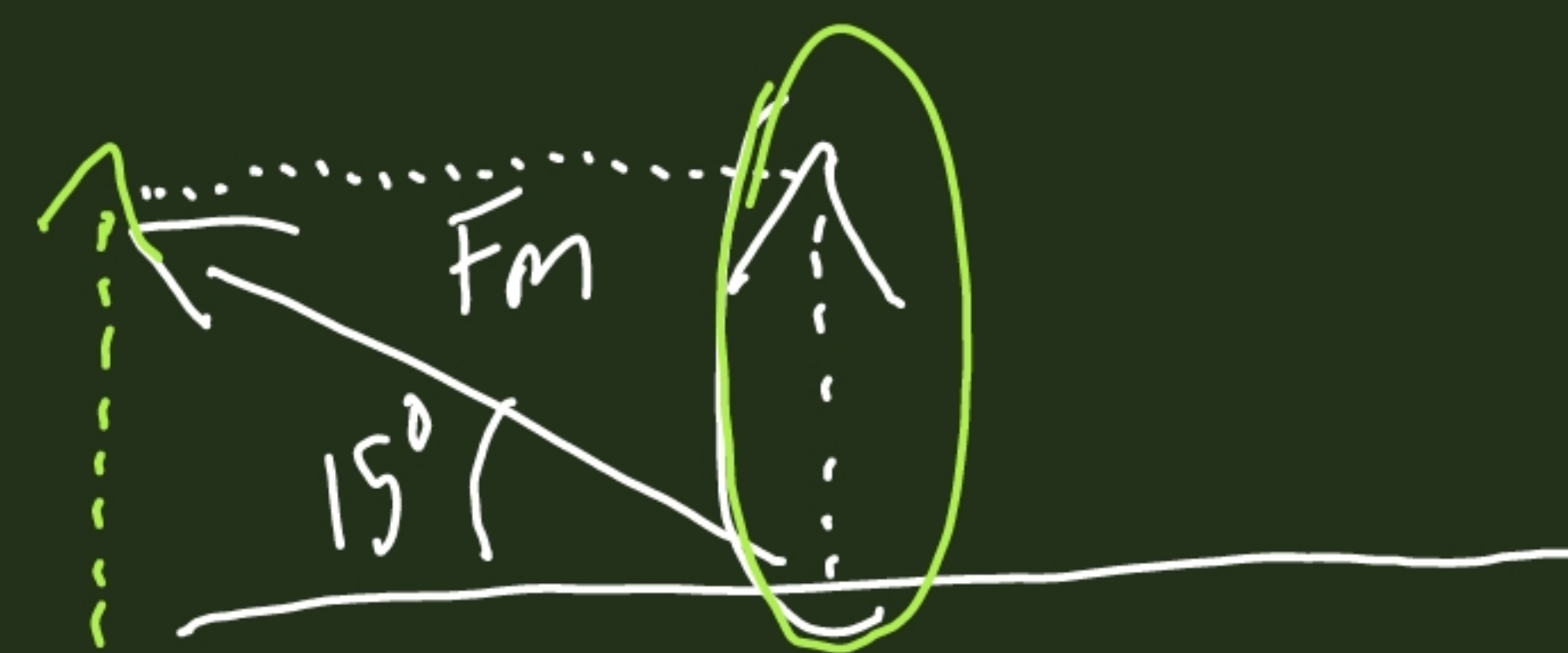
$$m_{ES} = 2'8 \text{ kg}$$

$$d_{CG_{ES}} = 24 \text{ cm} = 0'24 \text{ m}$$

$F_M?$

$$\alpha = 15^\circ$$

$$d_{FM} = 12 \text{ cm} = 0'12 \text{ m}$$



$$\text{sen } 15 = \frac{x}{F_M}$$

Operaciones

$$\vec{M}_{FM} + \vec{M}_{ES} = 0$$

$$F_M \cdot \text{sen } 15^\circ \cdot 0'12 = 2'8 \cdot 9'8 \cdot 0'24$$

$$F_M = 212'04 \text{ N}$$

