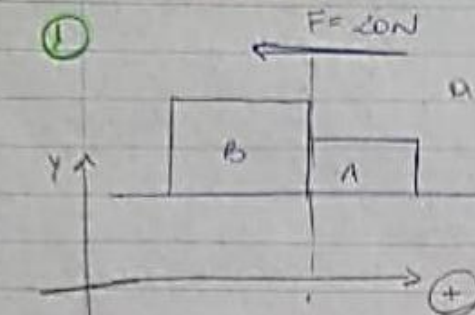


# RESOLUÇÃO (EXEMPLOS)

## FÍSICA I

## LEIS DE NEWTON E APLIC. I e II

①

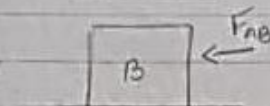


$a = ?$

$$F_{BA} = F_{AB}$$

Em B

$$m_B = 6 \text{ kg}$$



$$F_R = m_B a$$

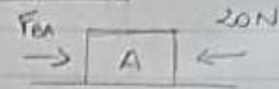
$$-F_{AB} = m_B a$$

$$-F_{AB} = m_B a$$

$$-F_{AB} = (6)(-2)$$

$$(-1) \quad -F_{AB} = -12 \Rightarrow \boxed{F_{AB} = 12 \text{ N}}$$

Em A



$$m_A = 4 \text{ kg}$$

$$F_R = m_A a$$

$$F_{BA} - F = m_A a$$

II  
+

$$F_{BA} - F = m_A a$$

$$-F_{AB} = m_B a$$

$$-F = (m_A + m_B) a$$

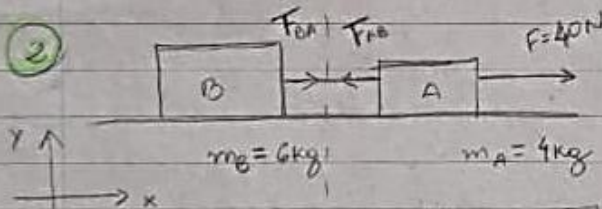
$$-20 = (4 + 6) a$$

$$-20 = 10 a$$

$$\frac{-20}{10} = a$$

$$\boxed{a = -2 \text{ m/s}^2}$$

②



$$m_B = 6 \text{ kg}$$

$$m_A = 4 \text{ kg}$$

Em B

$$F_R = m_B a$$

$$T_B = m_B a$$

Em A

$$F_R = m_A a$$

$$F - T_{AB} = m_A a$$

$$T_{BA} = T_{AB}$$

$$F - T_{AB} = m_A a$$

$$T_B = m_B a$$

$$F = (m_A + m_B) a$$

$$40 = (4 + 6) a$$

$$\frac{40}{10} = a$$

$$\boxed{a = 4 \text{ m/s}^2}$$

$$T_B = m_B a$$

$$T_B = 6(4)$$

$$\boxed{T_B = 24 \text{ N}}$$

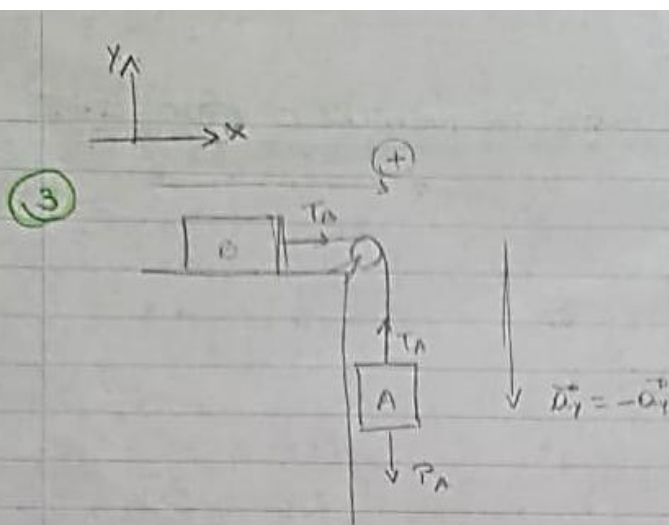
ou

$$F - T_{AB} = m_A a$$

$$40 - T_{AB} = 4(4)$$

$$40 - 16 = T_{AB}$$

$$\boxed{T_{AB} = 24 \text{ N}}$$



Em B

$$F_{Rx} = m_B a_x \quad F_{Ry} = m_B a_y \quad \tilde{N} \text{ tem } F_{Rz}$$

$$T_B = m_B a \quad F_{Ry} = 0$$

Em A

$$T_A = T_B$$

$$F_{Ry} = m_A a_y \quad \rightarrow \text{vinculados ao } a_y!$$

$$+T_A - P_A = -m_A a_y$$

$$F_{Rx} = m_B a_x \quad \tilde{N} \text{ tem } F_{Rz}$$

$$F_{Rx} = 0$$

$$T = ?$$

$T_A = T_B \rightarrow$  escolha 1 equação.

$$T_B = m_B a$$

$$[00]$$

$$T_B = 6(3,92)$$

$$T_B = 23,52 \text{ N}$$

$$T_A - P_A = -m_A a$$

$$T_A = P_A - m_A a$$

$$T_A = (m_A g) - m_A a$$

$$T_A = (4 \times 9,8) - (4 \times 3,92)$$

$$T_A = 23,52 \text{ N}$$

$$T_B = m_B a$$

$$+T_A - P_A = -m_A a$$

$$P_A = (m_B + m_A) a$$

$$m_A g = (m_B + m_A) a$$

$$4(9,8) = (6 + 4) a$$

$$39,2 = 10 a$$

$$\frac{39,2}{10} = a$$

$$a = 3,92 \text{ m/s}^2$$