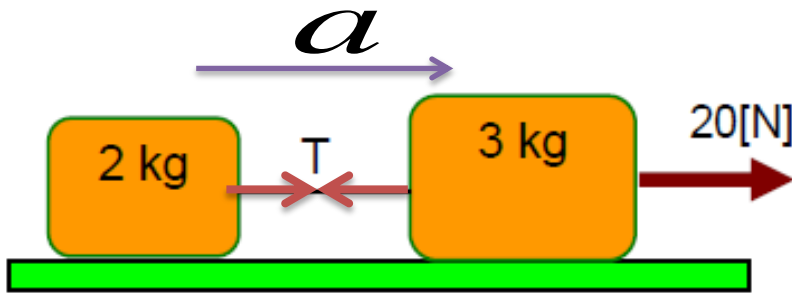


ACTIVIDAD 1

PROBLEMAS DEL TIPO B

1. Calcular la tensión de la cuerda.



- A) 7[N]
- B) 8[N]
- C) 9[N]
- D) 10[N]

$$a = \frac{\sum F}{\sum m}$$

$$a = \frac{20[N]}{5[kg]}$$

$$a = 4[m/s^2]$$

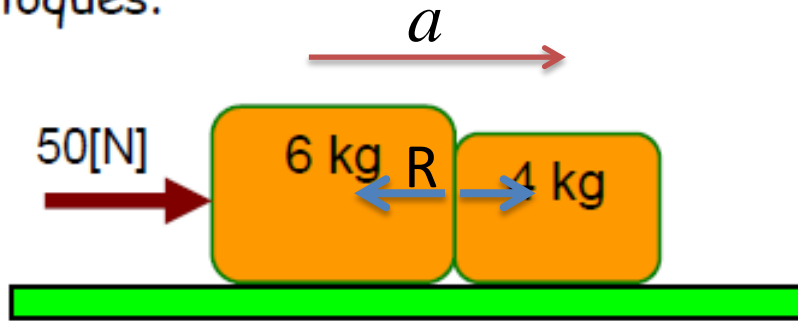
$$\sum F_x = m_2 a$$

$$T = m_2 a$$

$$T = 2[kg] 4[m/s^2]$$

$$T = 8[N]$$

2. Calcular la fuerza de contacto entre los bloques.



- A) 5[N]
- B) 10[N]
- C) 15[N]
- D) 20[N]

$$a = \frac{\sum F}{\sum m}$$

$$a = \frac{50 [N]}{10 [kg]}$$

$$a = 5 [m/s^2]$$

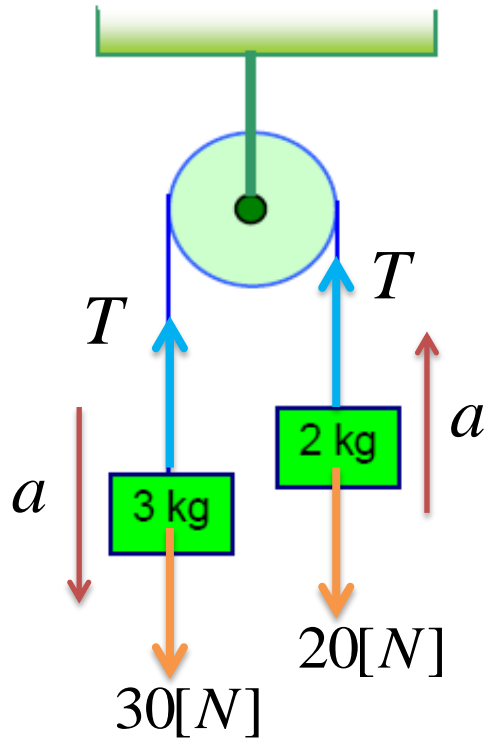
$$\sum F_x = m_4 a$$

$$R = m_4 a$$

$$R = 4 [kg] 5 [m/s^2]$$

$$R = 20 [N]$$

3. Calcular la aceleración del sistema.



$$\sum F_y = m_3 a$$

$$30[N] - T = 3[kg] 2[m/s^2]$$

$$30[N] - T = 6[N] \quad \Rightarrow \quad T = 24[N]$$

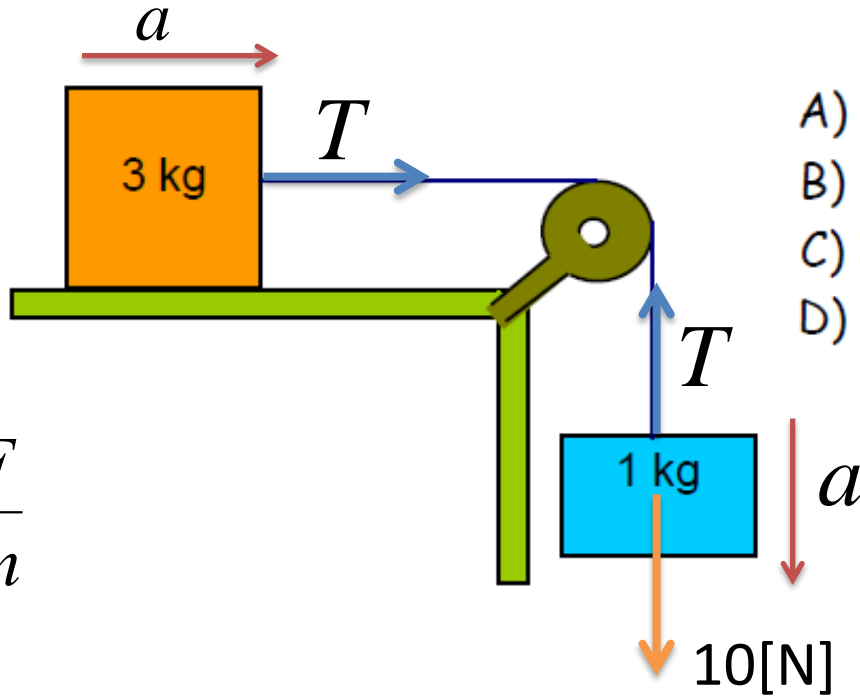
- A) $2[m/s^2]$
- B) $3[m/s^2]$
- C) $4[m/s^2]$
- D) $5[m/s^2]$
- E) NA.

$$a = \frac{\sum F}{\sum m} \quad \Rightarrow \quad a = \frac{30[N] - 20[N]}{3[kg] + 2[kg]}$$

$$a = \frac{10[N]}{5[kg]}$$

$$a = 2[m/s^2]$$

4. Calcular la aceleración del sistema.



- A) 2,3[m/s²]
- B) 2,5[m/s²]
- C) 2,7[m/s²]
- D) 2,9[m/s²]
- E) NA.

$$a = \frac{\sum F}{\sum m}$$

$$a = \frac{10[N]}{4[kg]}$$

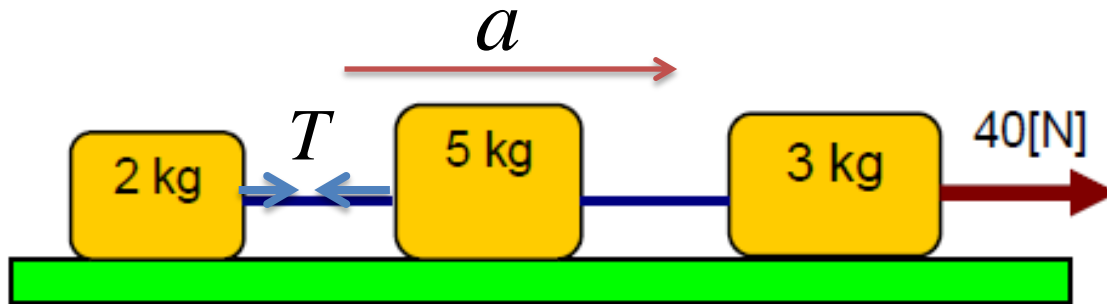
$$a = 2,5[m/s^2]$$

$$\sum F_x = m_3 a \quad T = m_3 a$$

$$T = 3[kg] 2,5[m/s^2]$$

$$T = 7,5[N]$$

5. Calcular la tensión "T" de la cuerda



A) 7[N] B) 8[N] C) 9[N] D) 10[N] E) NA.

$$a = \frac{\sum F}{\sum m}$$

$$\sum F_x = m_2 a$$

$$a = \frac{40[N]}{10[kg]}$$

$$T = m_2 a$$

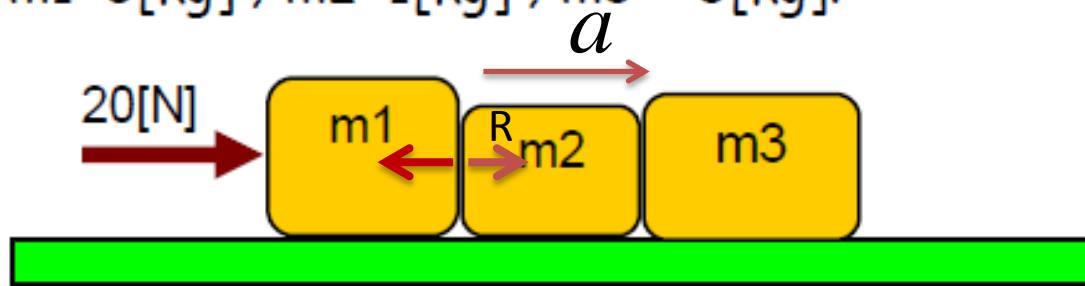
$$T = 8[N]$$

$$a = 4[m/s^2]$$

$$T = 2[kg] 4[m/s^2]$$

6. Calcular la fuerza de contacto entre m_1 y m_2 .

$m_1=6[\text{kg}]$; $m_2=1[\text{kg}]$; $m_3 = 3[\text{kg}]$.



A) $10[\text{N}]$ B) $11[\text{N}]$ C) $12[\text{N}]$ D) $13[\text{N}]$ E) NA.

$$a = \frac{\sum F}{\sum m}$$

$$\sum F_x = m_1 a$$

$$20[\text{N}] - R = 6[\text{kg}] 2[\text{m/s}^2]$$

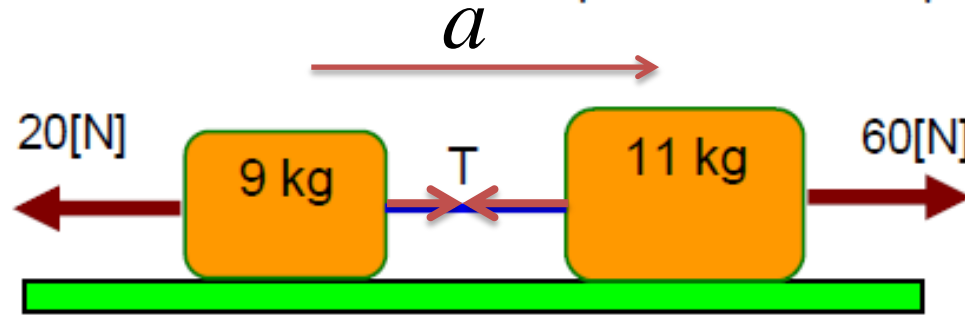
$$a = \frac{20[\text{N}]}{10[\text{kg}]}$$

$$20[\text{N}] - R = 12[\text{N}]$$

$$a = 2[\text{m/s}^2]$$

$$R = 8[\text{N}]$$

7. Halla la tensión de la cuerda que une los bloques.



A) 38[N] B) 34[N] C) 38[N] D) 40[N] E) NA.

$$a = \frac{\sum F}{\sum m}$$

$$\sum F_x = m_{11} a$$

$$a = \frac{60[N] - 20[N]}{20[kg]}$$

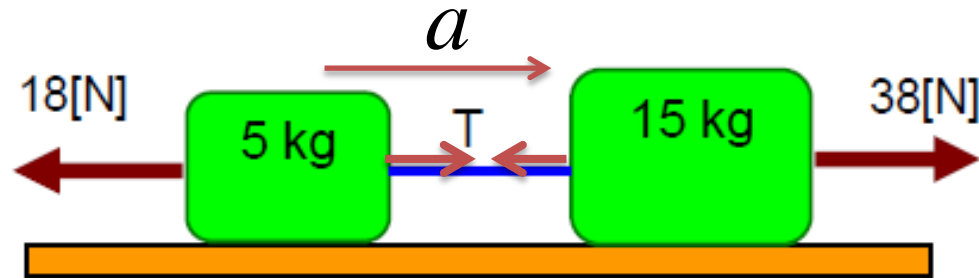
$$60[N] - T = 11[kg] 2[m/s^2]$$

$$60[N] - T = 22[N]$$

$$a = 2[m/s^2]$$

$$T = 38[N]$$

8. Halla la aceleración de los bloques.



A) 1 [m/s²] B) 2 [m/s²] C) 4 [m/s²] D) 6 [m/s²]

$$a = \frac{\sum F}{\sum m}$$

$$\sum F_x = m_5 a$$

$$a = \frac{38 [N] - 18 [N]}{20 [kg]}$$

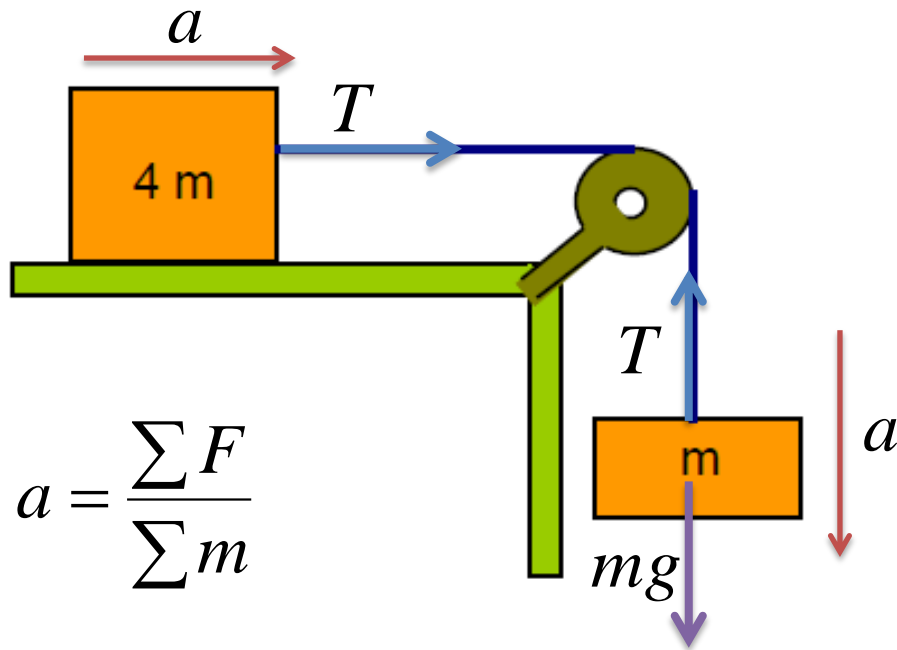
$$T - 18 [N] = 5 [kg] 1 [m/s^2]$$

$$T = 18 [N] + 5 [N]$$

$$a = 1 [m/s^2]$$

$$T = 23 [N]$$

9. ¿Cuál es la aceleración del sistema ?



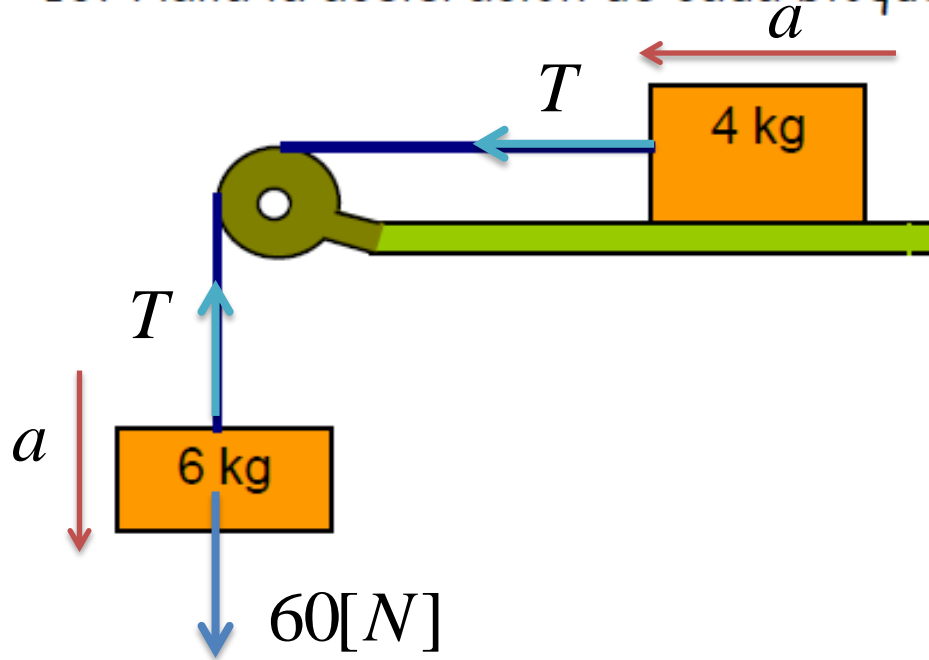
- A) $2[m/s^2]$
- B) $3[m/s^2]$
- C) $4[m/s^2]$
- D) $5[m/s^2]$
- E) NA.

$$a = \frac{\sum F}{\sum m}$$

$$a = \frac{mg}{5m}$$

$$a = 2[m/s^2]$$

10. Halla la aceleración de cada bloque.



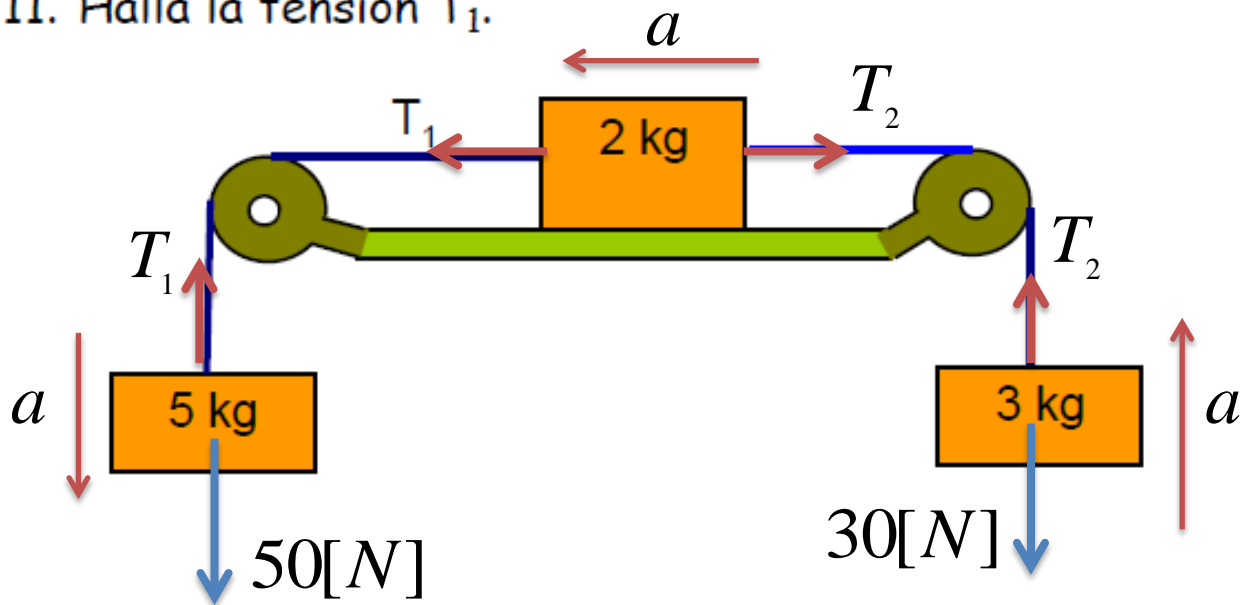
- A) $2[m/s^2]$
- B) $4[m/s^2]$
- C) $5[m/s^2]$
- D) $6[m/s^2]$
- E) NA.

$$T = 24 [N]$$

$$a = \frac{\sum F}{\sum m} \quad \rightarrow \quad a = \frac{60[N]}{10[kg]} \quad \rightarrow \quad a = 6[m/s^2]$$

$$\text{Masa de 4kg : } \sum F_x = m_4 a \quad \rightarrow \quad T = 4[kg] 6[m/s^2]$$

11. Halla la tensión T_1 .

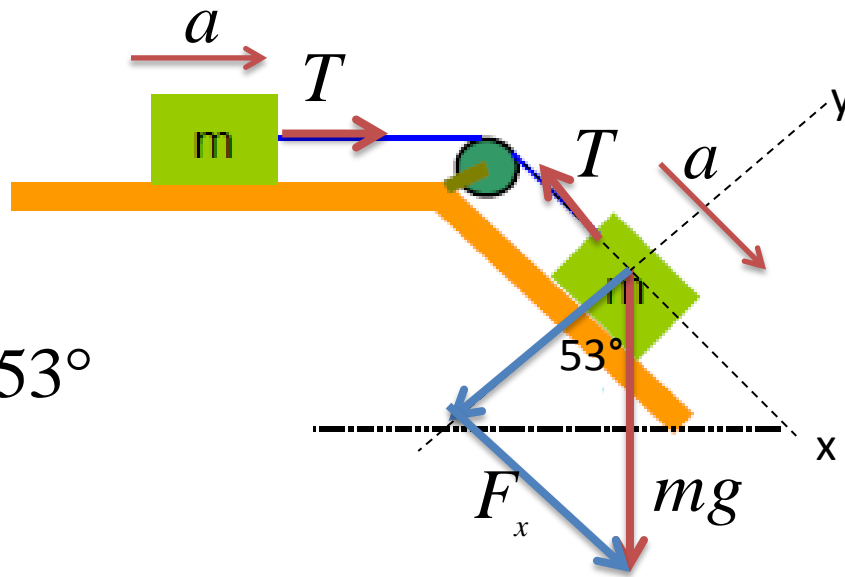


$$a = \frac{\sum F}{\sum m} \quad \Rightarrow \quad a = \frac{50[N] - 30[N]}{10[kg]} \quad \Rightarrow \quad a = 2[m/s^2]$$

Masa de 5kg : $\sum F_y = m_5 a \quad \Rightarrow \quad 50 - T_1 = 5[kg] 2[m/s^2]$

$$50 - T_1 = 10[N] \quad \Rightarrow \quad T_1 = 40[N]$$

12. Halla la aceleración del sistema.



- A) 2[m/s²]
- B) 4[m/s²]
- C) 6[m/s²]
- D) 8[m/s²]
- E) NA.

$$F_x = mg \operatorname{sen} 53^\circ$$

$$\sum F_x = m a$$

$$F_x = m a$$

~~$$mg \operatorname{sen} 53^\circ = m a$$~~

$$a = g \operatorname{sen} 53^\circ$$

$$a = 10[m/s^2] \cdot 4/5$$

$$a = 8[m/s^2]$$

FIN

JORGE CABRERA