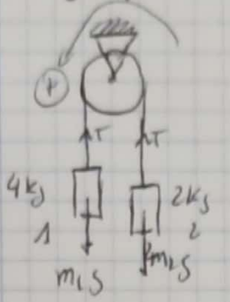
03 DNAK

[a]



¿a?

CUERPO 1

$m_1g - T = m_1a$

CUERPO 2

$T - m_2g = m_2a$

$$\left.\begin{array}{l} m_1g - T = m_1a \\ T - m_2g = m_2a \end{array}\right\} \left.\begin{array}{l} 4\cdot 9{,}8 - T = 4a \\ T - 2\cdot 9{,}8 = 2a \end{array}\right\}$$

$$\left.\begin{array}{l} 39{,}2 - T = 4a \\ T - 19{,}6 = 2a \end{array}\right\}$$

$a = 3{,}267\ m/s^2$

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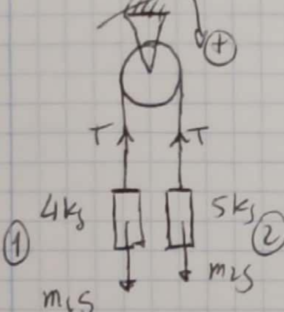
[b]



CUERPO 1

$T - 4g = 4a$

CUERPO 2

$5g - T = 5a$

$$\left.\begin{array}{l} T - 4g = 4a \\ 5g - T = 5a \end{array}\right\} \left.\begin{array}{l} T - 39{,}2 = 4a \\ 49 - T = 5a \end{array}\right\}$$

$a = 1{,}088\ m/s^2$

DISTANCIA QUE RECORRE EN 2s EL CUERPO 2

MRUA $\quad y = 0 + 0 + \frac{1}{2}at^2$

$y = \frac{1}{2}\, 1{,}088 \cdot 2^2 = 2{,}178\ m$

→ ESTO ES LO QUE SUBE 1

→ ESTO ES LO QUE BAJA 2

SE SEPARAN $2 \times 2{,}178 = 4{,}356\ m$

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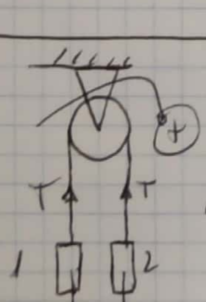
[c]



$m_1 = 4kg$

$m_2 = 6kg$ ¿T?

CUERPO 1 $T - m_1g = m_1a$

CUERPO 2 $m_2g - T = m_2a$

$$\left.\begin{array}{l} T - 39{,}2 = 4a \\ 58{,}8 - T = 6a \end{array}\right\}$$

$a = 1{,}96\ m/s^2 \rightarrow T = 47{,}04\ N$

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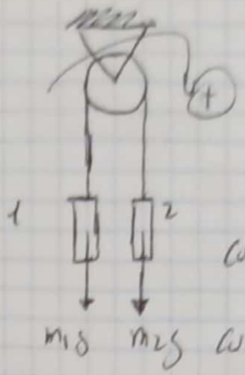
[c]



$m_1 = 3kg$

$m_2 = 4kg$

¿V t = 2s?

CUERPO 1

$T - m_1g = m_1a$

CUERPO 2

$m_2g - T = m_2a$

$$\left.\begin{array}{l} T - 29{,}4 = 3\cdot a \\ 39{,}2 - T = 4a \end{array}\right\} a = 1{,}4\ m/s^2$$

MRUA $\quad V = V_0 + at = 0 + 1{,}4\cdot 2 = 2{,}8\ m/s$

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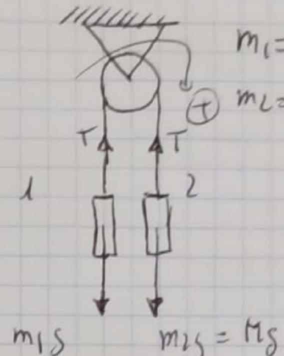
[d]



$m_1 = 9kg$

$m_2 = 9kg$ → AÑADIMOS LA MASA m

⇓

SU MASA ES M

$M = 9 + m$

CUERPO 1

$$\left.\begin{array}{l} T - m_1g = m_1a \\ Mg - T = Ma \end{array}\right\} \left.\begin{array}{l} T - 88{,}2 = 9\cdot a \\ 9{,}8M - T = M\cdot a \end{array}\right\}$$

a → NOS DICEN QUE ES $\frac{g}{10} = 0{,}98\ m/s^2$

$$\left.\begin{array}{l} T - 88{,}2 = 9\cdot 0{,}98 \\ 9{,}8M - T = 0{,}98M \end{array}\right\} M = 11kg$$

COMO $M = 9 + m$

$m = 2kg$
