

$$\textcircled{3} \quad v_0 = 0 \text{ m/s}$$

$$v_f = 100 \frac{\text{km}}{\text{h}} = 27.8 \text{ m/s}$$

$$t = 7 \text{ s}$$

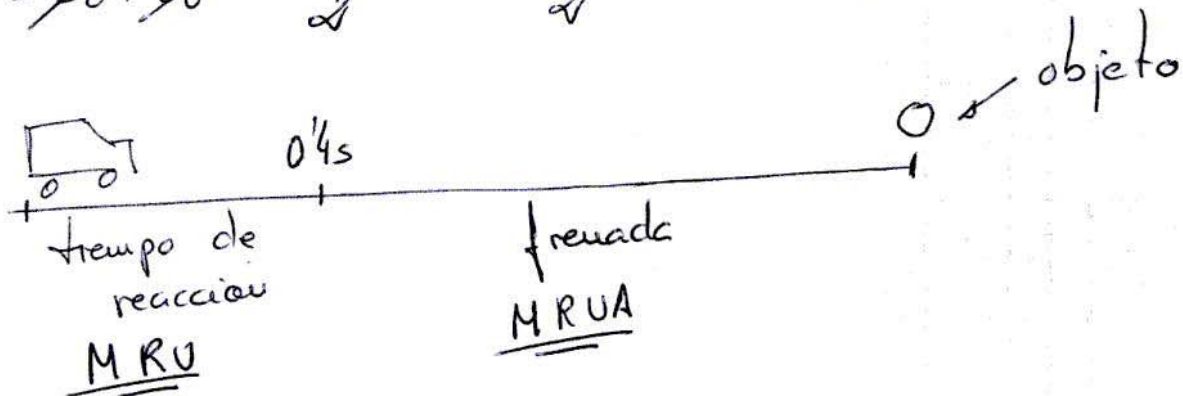
$$v_f = v_0 + a \cdot t$$

$$27.8 = 0 + a \cdot 7$$

$$a = \frac{27.8}{7} = \underline{\underline{4 \text{ m/s}^2}}$$

$$s = s_0 + v_0 \cdot t + \frac{1}{2} a t^2 = \frac{1}{2} 4 \cdot 7^2 = \underline{\underline{98 \text{ m}}}$$

$\textcircled{4}$



\textcircled{I} MRU

$$v = 130 \frac{\text{km}}{\text{h}} = 36.1 \text{ m/s}$$

$$t = 0.4 \text{ s}$$

$$s = s_0 + v \cdot t = 36.1 \cdot 0.4 = 14.4 \text{ m}$$

\textcircled{II} MRUA

$$v_0 = 130 \frac{\text{km}}{\text{h}} = 36.1 \text{ m/s}$$

$$v_f = 0$$

$$a = 3.7 \text{ m/s}^2$$

$$v_f = v_0 - a \cdot t$$

$$0 = 36.1 - 3.7 \cdot t$$

$$t = \frac{36.1}{3.7} = \underline{\underline{9.5 \text{ s}}}$$

$$s = s_0 + v_0 \cdot t - \frac{1}{2} a t^2 =$$

$$= 14.4 + 36.1 \cdot 9.5 - \frac{1}{2} 3.7 \cdot 9.5^2 = \underline{\underline{190.4 \text{ m}}}$$

$$\textcircled{5} \quad d_{A \rightarrow B} = 270 \text{ Km} = 270000 \text{ m}$$

$$v_A = 140 \text{ Km/h} = 38.9 \text{ m/s} \quad s = v \cdot t$$

$$v_B = 180 \text{ Km/h} = 50 \text{ m/s}$$

$$s_A + s_B = s_T$$

$$38.9 \cdot t + 50 \cdot t = 270000$$

$$88.9 t = 270000$$

$$t = \frac{270000}{88.9} = \underline{\underline{3037 \text{ s}}}$$

$$s_A = 38.9 \cdot 3037 = 118139.3$$

$$s_B = 50 \cdot 3037 = \frac{151850}{\underline{\underline{269989.3 \text{ m}}}}$$

$$\textcircled{6} \quad 59 \cdot 10^7 \text{ cm} \rightarrow \text{Mm}$$

$$a) 59 \cdot 10^7 \text{ cm} = 59 \cdot 10^8 \text{ cm} \cdot \frac{10^{-2} \text{ m}}{1 \text{ cm}} \cdot \frac{1 \text{ Mm}}{10^6 \text{ m}} = 5.9 \text{ Mm}$$

$$b) 2300000 \text{ dam}^3 \rightarrow \text{Kp}$$

$$2300000 \text{ dam}^3 = 2.3 \cdot 10^6 \text{ dam}^3 \cdot \frac{10^3 \text{ m}^3}{1 \text{ dam}^3} \cdot \frac{10^3 \text{ Kp}}{1 \text{ m}^3} \cdot \frac{1 \text{ Kp}}{10^3 \text{ Kp}} = \underline{\underline{2.3 \cdot 10^9 \text{ Kp}}}$$

$$c) 298 \text{ K} \rightarrow ^\circ \text{F} \quad 298 \text{ K} - 273 = 25^\circ \text{C}$$

$$^\circ \text{F} = \frac{25 \cdot 180}{100} + 32 = \underline{\underline{77^\circ \text{F}}}$$

d) $500000 \text{ mm}^2 \rightarrow a$

$$500000 \text{ mm}^2 = 5 \cdot 10^5 \text{ mm}^2 \cdot \frac{10^{-6} \text{ m}^2}{1 \text{ mm}^2} \cdot \frac{1 a}{10^2 \text{ m}^2} = \underline{5 \cdot 10^{-3} a}$$

e) $60000000 \text{ KP} = 6 \cdot 10^7 \text{ KP} \cdot \frac{10^{3P}}{1 \text{ KP}} \cdot \frac{1 \text{ m}^3}{10^{3P}} \cdot \frac{1 \text{ km}^3}{10^6 \text{ m}^3} = \underline{60 \text{ km}^3}$

f) $500 \text{ K} \rightarrow ^\circ\text{F}$

$500 \text{ K} = 227 ^\circ\text{C}$

$$^\circ\text{F} = \frac{1.8 \cdot 227}{1} + 32 = \underline{440.6 ^\circ\text{F}}$$

g) $279 \cdot 10^4 \text{ hP}$

$$279 \cdot 10^4 \text{ hP} = 279 \cdot 10^5 \text{ hP} \cdot \frac{10^2 \text{ P}}{1 \text{ hP}} \cdot \frac{1 \text{ m}^3}{10^3 \text{ P}} \cdot \frac{1 \text{ dam}^3}{10^3 \text{ m}^3} = \underline{279 \cdot 10^4 \text{ dam}^3}$$

h) $34565 \cdot 10^5 \text{ dag} = 34565 \cdot 10^7 \text{ dag} \cdot \frac{10 \text{ g}}{1 \text{ dag}} \cdot \frac{1 \text{ Mg}}{10^6 \text{ g}} = \underline{34565 \cdot 10^2 \text{ Mg}}$

i) $4 \cdot 10^{15} \text{ } \cancel{\mu\text{m}} \cdot \frac{10^{-6} \text{ m}}{1 \cancel{\mu\text{m}}} \cdot \frac{1 \text{ dm}}{10^{-1} \text{ m}} = 4 \cdot 10^{10} \text{ dm}$

j) $3400 \text{ kg/m}^3 = 34 \text{ g/cm}^3$

$$30 \text{ m/s} \cdot \frac{1 \text{ km}}{1000} \cdot \frac{3600 \text{ s}}{1 \text{ h}} = 108 \text{ km/h}$$