

ESERCIZI SUL MOTO RETTILINEO UNIFORME



$$V = 144 \frac{\text{km}}{\text{h}}$$

$$\frac{144 \text{ km}}{1 \text{ h}} = \frac{144 \cdot 10^3 \text{ dm}}{60 \text{ min}} = 2,4 \cdot 10^4 \frac{\text{dm}}{\text{min}}$$

$$\frac{144 \cdot 10^6 \text{ mm}}{3600 \text{ s}} = 0,04 \cdot 10^6 \frac{\text{mm}}{\text{s}} = 4 \cdot 10^4 \frac{\text{mm}}{\text{s}}$$

$$\frac{\Delta S}{V} = \frac{v \Delta t}{v}$$

$$\Delta t = \frac{80 \text{ km} - 0 \text{ km}}{40000 \frac{\text{km}}{\text{s}}} = 0,002 \text{ s}$$

2) $l_T = 150 \text{ m}$ $l_C = 850 \text{ m}$ $\Delta t = 25 \text{ s}$ $v = ?$

$$\Delta s = v \Delta t \quad v = \frac{\Delta s}{\Delta t} \quad v = \frac{(850 + 150) \text{ m}}{25 \text{ s}} = 40 \frac{\text{m}}{\text{s}}$$



$\Delta s = 2 \text{ km}$ ladro $s_L = 108 \Delta t + 2$

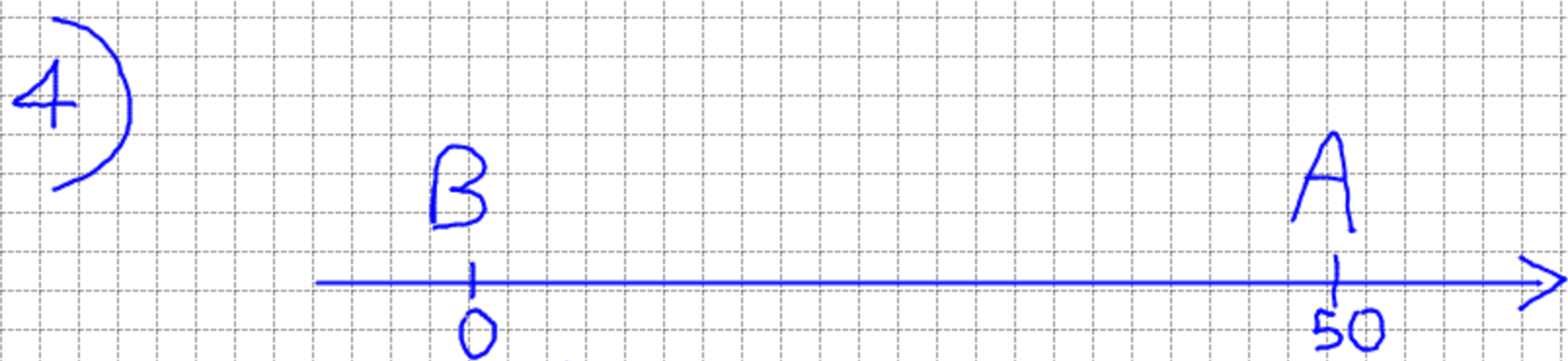
$v_L = 108 \frac{\text{km}}{\text{h}}$

$v_P = 144 \frac{\text{km}}{\text{h}}$

polizia $s_P = 144 \Delta t$

$$\begin{cases} s_P = s_L \\ s_L = 108 \Delta t + 2 \\ s_P = 144 \Delta t \end{cases} \quad \begin{cases} s_P = 144 \Delta t \\ 108 \Delta t + 2 = 144 \Delta t \end{cases} \quad \begin{cases} s_P = 144 \Delta t \\ 36 \Delta t = 2 \end{cases}$$

$$\begin{cases} s_P = 144 \Delta t \\ \Delta t = 0,05 \text{ h} \end{cases} \quad \begin{cases} s_P = 8 \text{ km} \\ \Delta t = 90 \text{ s} \\ \Delta t \approx 200 \text{ s} \end{cases}$$



$v_B = 90 \text{ km/h}$

$v_A = 37,8 \text{ km/h}$

$s_B = v_B t$

$s_A = -v_A t + 50$

$$\begin{cases} s_B = 90 t \\ s_A = -37,8 t + 50 \end{cases} \quad \begin{cases} s_B = 90 t \\ 90 t + 37,8 t = 50 \end{cases}$$

$$\begin{cases} s_B = 90 t \\ 127,8 t = 50 \end{cases} \quad \begin{cases} s_B = 90 t \\ t = \frac{50 \text{ km}}{127,8 \frac{\text{km}}{\text{h}}} \approx 0,4 \text{ h} \end{cases}$$

$$\begin{cases} s_B = 90 t \\ t \approx 0,4 \text{ h} \end{cases} \quad \begin{cases} s_B = 90 \text{ km/h} \cdot 0,4 \text{ h} \approx 35 \text{ km} \\ t \approx 24 \text{ min} \end{cases}$$

5)

$v_B = 18 \text{ km/h}$

$\Delta t = 90 \text{ s}$

$v_P = 43,2 \text{ km/h}$

$1 \text{ h} : 3600 \text{ s} = x : 90 \text{ s}$

$v_B = \frac{\Delta s}{\Delta t}$

$\Delta s_B = v_B \cdot \Delta t$

$x = \frac{90 \text{ s}}{3600 \text{ s}} = 0,025 \text{ h}$

$\Delta s_B = 18 \text{ km/h} \cdot 0,025 \text{ h} = 0,45 \text{ km}$

$s_B = 0,45 + 18 t$

$s_P = 43,2 t$

$$\begin{cases} S_B = 18x + 0,45 \\ S_P = 43,2x \end{cases}$$

$$\begin{cases} 43,2x = 18x + 0,45 \\ S_P = 43,2x \end{cases} \begin{cases} 25,2x = 0,45 \\ S_P = 43,2x \end{cases} \begin{cases} x \hat{=} 0,018h \\ S_P = 43,2x \end{cases}$$

$$\begin{cases} x = 0,018h \\ S_P = 0,771km \end{cases}$$

$$\begin{cases} x \hat{=} 1min \\ S_P = 771m \end{cases}$$