

1. U prve $\frac{2}{5}$ puta brzina automobila je 40 km/h, a ostatak puta brzina mu je 100km/h. Kolika je srednja brzina.

$$\begin{array}{ccc} S_1 = \frac{2S}{5} & & S_2 = \frac{3S}{5} \\ \hline V_1 = 40 \frac{km}{h} & & V_2 = 100 \frac{km}{h} \\ t_1 = \frac{S_1}{V_1} & & t_2 = \frac{S_2}{V_2} \\ t_1 = \frac{2S}{5V_1} & & t_2 = \frac{3S}{5V_2} \\ \\ V_{sr} = \frac{S_1 + S_2}{t_1 + t_2} \text{ (ovako se definiše srednja brzina)} \end{array}$$

$$V_{sr} = \frac{S}{\frac{2S}{5V_1} + \frac{3S}{5V_2}}$$
$$V_{sr} = \frac{S}{S \cdot \left(\frac{2}{5V_1} + \frac{3}{5V_2} \right)}$$

$$V_{sr} = \frac{1}{\frac{2V_2 + 3V_1}{5V_1V_2}}$$

$$V_{sr} = \frac{5V_1V_2}{2V_2 + 3V_1}$$

$$V_{sr} = 62,5 \frac{m}{s}$$