

Dráha,
ktorú prešlo
prvé auto
kým sa
stretlo
s druhým
autom.

T – čas za ktorý sa stretli obidve autá (1h)

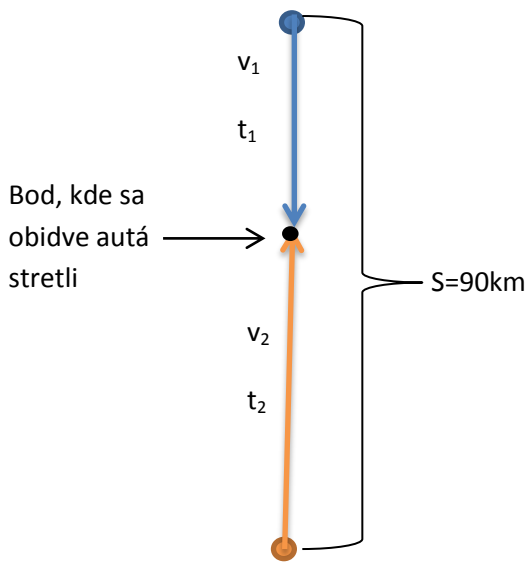
$$s_1 = v_1 * T$$

$$s_2 = v_2 * T$$

$$s = s_1 + s_2$$

$$s = v_1 * T + v_2 * T$$

$$s = T * (v_1 + v_2)$$



$$s = v_1 * (t_2 + 27) \quad \leftarrow \quad t_1 = t_2 + 27$$

$$s = v_2 * t_2 \quad \rightleftarrows \quad t_2 = \frac{s}{v_2}$$

$$s = T * (v_1 + v_2) \quad T = 1 \text{ hod}$$

$$90 = v_1 * \left(\frac{90}{v_2} + 27\right) \quad \longrightarrow \quad 27 \text{ min} = 0,45 \text{ hod}$$

$$90 = 1 * (v_1 + v_2) \quad \rightleftarrows \quad v_1 = 90 - v_2$$

$$90 = v_1 * \left(\frac{90}{v_2} + 0,45\right)$$

$$90 = (90 - v_2) * \left(\frac{90}{v_2} + 0,45\right)$$

$$90 = (90 - v_2) * \frac{90 + 0,45v_2}{v_2} \quad /* v_2$$

$$90v_2 = (90 - v_2) * (90 + 0,45v_2)$$

$$90v_2 = 8100 + 40,5v_2 - 90v_2 - 0,45v_2^2$$

$$-0,45v_2^2 - 90v_2 + 40,5v_2 - 90v_2 + 8100 = 0$$

$$-0,45v_2^2 - 139,5v_2 + 8100 = 0 \quad /* (-20)$$

$$9v_2^2 + 2790v_2 - 162000 = 0$$

$$D = 13616100$$

$$x_{1,2} = \frac{-2790 \pm \sqrt{13616100}}{18} =$$

50 km.h⁻¹

-360

v_2 nám vyšlo 50 km.h⁻¹.
 v_1 môžeme vypočítať zo vzorca
 $s = T * (v_1 + v_2)$
 $90 = 1 * (v_1 + 50)$
 $v_1 = 40 \text{ km.h}^{-1}$