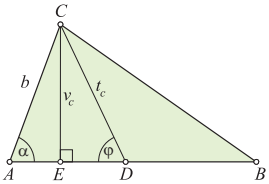
Zadatak 44. Odredi duljine stranica a i b te kutove trokuta $\triangle ABC$ ako je $c = 18.8$ cm, $t_c = 14.2$ cm i $v_c = 11.8$ cm.

Rješenje.



$$c = 18.8\,\text{cm}$$
$$t_c = 14.2\,\text{cm}$$
$$v_c = 11.8\,\text{cm}$$

$$a,\ b,\ \alpha,\ \beta,\ \gamma = ?$$

$$\sin\varphi = \frac{v_c}{t_c} = \frac{11.8}{14.2} = 0.83099 \implies \varphi = 56^\circ 12'$$

$$b^2 = \left(\frac{c}{2}\right)^2 + t_c^2 - 2\cdot\frac{c}{2}\cdot t_c\cdot\cos\varphi$$

$$b = 11.9\,\text{cm}$$

$$\sin\alpha = \frac{v_c}{b} \implies \alpha = 82^\circ 34'$$

$$a^2 = b^2 + c^2 - 2bc\cos\alpha \implies a = 20.9\,\text{cm}$$

$$\cos\beta = \frac{a^2 + c^2 - b^2}{2ac} \implies \beta = 34^\circ 22'$$

$$\gamma = 180^\circ - \alpha - \beta = 63^\circ 4'$$