

**Zadatak 33.** Kolika je duljina stranice  $c$  trokuta  $\triangle ABC$  ako je  $\alpha = 53^\circ$ ,  $\beta = 65^\circ$ ,  $s_\gamma = 13.5$  cm?

**Rješenje.**

$$\alpha = 53^\circ$$

$$\beta = 65^\circ$$

$$s_\gamma = 13.5 \text{ cm}$$

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$$c = ?$$

$$\gamma = 180^\circ - \alpha - \beta = 180^\circ - 53^\circ - 65^\circ = 62^\circ \implies \frac{\gamma}{2} = 31^\circ$$

$$\varphi = 180^\circ - \alpha - \frac{\gamma}{2} = 96^\circ$$

$$b = \frac{s_\gamma \cdot \sin \varphi}{\sin \alpha} = \frac{13.5 \cdot 0.99452}{0.798636} = 16.81 \text{ cm}$$

$$a = \frac{b \cdot \sin \alpha}{\sin \beta} = \frac{16.81 \cdot 0.798636}{0.906308} = 14.81 \text{ cm}$$

$$c^2 = a^2 + b^2 - 2ab \cdot \cos \gamma = 14.81^2 + 16.81^2 - 2 \cdot 14.81 \cdot 16.81 \cdot \cos 62^\circ = 268.15658 \text{ cm}^2$$

$$c = 16.38 \text{ cm.}$$

