Zadatak 7. Površina trokuta iznosi $20\ \text{cm}^2$, dva su njegova kuta jednaka $30°$ i $45°$. Kolike su duljine stranica ovog trokuta?

Rješenje.

$$\left.\begin{aligned} P &= 20\,\text{cm}^2 \\ \alpha &= 30deg \\ \beta &= 45° \end{aligned}\right\} \Longrightarrow \gamma = 180° - \alpha - \beta = 105°$$

$a,\ b,\ c = ?$

$$P = \frac{c^2 \cdot \sin\alpha \cdot \sin\beta}{2 \cdot \sin\gamma}$$

$$c^2 = \frac{20 \cdot 2\sin\gamma}{\sin\alpha \cdot \sin\gamma} = \frac{38.63703}{0.35355} = 109.282\,\text{cm}^2, \quad c = 10.454\,\text{cm}$$

$$a = \frac{c \cdot \sin\alpha}{\sin\gamma} = 5.411\,\text{cm}$$

$$b = \frac{a \cdot \sin\beta}{\sin\alpha} = 7.653\,\text{cm}$$