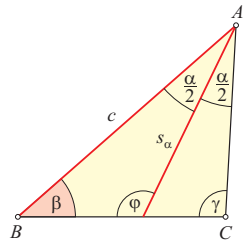
Zadatak 32. Odredi duljinu stranice b trokuta $\triangle ABC$ ako je $s_\alpha = 11$ cm, $c = 15$ cm, $\beta = 41°20'$.

Rješenje.



$s_\alpha = 11\,\text{cm}$

$c = 15\,\text{cm}$

$\beta = 41°20'$

$b = ?$

$$\frac{c}{\sin\varphi} = \frac{s_\alpha}{\sin\beta}$$

$$\sin\varphi = \frac{c\cdot\sin\beta}{s_\alpha} = \frac{15\cdot\sin 41°20'}{11} = \frac{15\cdot 0.660438}{11} = 0.900598$$

$\varphi_1 = 64°14'12''$, $\quad f_2 = 180° - \varphi_1 = 115°45'47.5''$

φ mora biti tupi kut inače nema rješenja (iz konstrukcije trokuta) $\Longrightarrow$

$\varphi = 115°45'47.5''$

$$\frac{\alpha}{2} = 180° - \beta - \varphi = 180° - (41°20' + 115°45'47.5'') = 22°54'12.5''$$

$\alpha = 2\cdot 22°54'12.6'' \approx 45°48'25''$

$\gamma = 180° - \alpha - \beta = 92°51'35''$

$$b = \frac{c\cdot\sin\beta}{\sin\gamma} = \frac{15\cdot 0.6604386}{0.9987547} = 9.92\,\text{cm}.$$