

Zadatak 20. Odredi duljinu stranice b trokuta $\triangle ABC$ ako je $a = 15$ cm, $c = 18$ cm, $\sin \beta = \frac{8}{17}$.

Rješenje.

$$a = 15\text{cm}$$

$$c = 18\text{cm}$$

$$\sin \beta = \frac{8}{17}$$

$$b = ?$$

$$\cos \beta = \sqrt{1 - \sin^2 \beta} = \sqrt{1 - \frac{64}{289}} = \pm \frac{15}{17}$$

$$1^\circ \quad \beta \in \left\langle 0, \frac{\pi}{2} \right\rangle, \quad \cos \beta = \frac{15}{17}$$

$$b^2 = a^2 + c^2 - 2ac \cos \beta$$

$$b = 8.52\text{cm}$$

$$2^\circ \quad \beta \in \left\langle \frac{\pi}{2}, \frac{3\pi}{2} \right\rangle, \quad \cos \beta = -\frac{15}{17}$$

$$b^2 = a^2 + c^2 - 2ac \cos \beta$$

$$b = 32.02\text{cm}$$