

Zadatak 8. Zbroj duljina dviju stranica trokuta jednak je 49 cm, a nasuprot tim stranicama su kutovi od $70^{\circ}24'$ i $50^{\circ}16'$. Izračunaj duljine stranica trokuta.

Rješenje.

$$a + b = 49\text{cm} \implies b = 49 - a$$

$$\alpha = 70^{\circ}24'$$

$$\beta = 50^{\circ}16'$$

$$a, b, c = ?$$

$$\frac{a}{b} = \frac{\sin \alpha}{\sin \beta}$$

$$\frac{a}{49 - a} = \frac{\sin 70^{\circ}24'}{\sin 50^{\circ}16'}$$

$$\frac{a}{49 - a} = 1.2249979$$

$$a = 60.02489754 - 1.2249979a$$

$$2.2249979a = 60.02489754$$

$$a = 26.98\text{cm}$$

$$b = 49\text{cm} - 26.98\text{cm} = 22.02\text{cm}$$

$$\gamma = 180^{\circ} - \alpha - \beta = 180^{\circ} - 70^{\circ}24' - 50^{\circ}16' = 59^{\circ}20'$$

$$c = \frac{a \cdot \sin \gamma}{\sin \alpha} = \frac{26.98 \cdot \sin 59^{\circ}20'}{\sin 70^{\circ}24'} = 24.64\text{cm}.$$