▌ Rješenja zadataka 6.2 ▌

Zadatak 1.   Izračunaj duljinu treće stranice i ostala dva kuta trokuta ako je:

1) $a = 42$ cm, $b = 37.1$ cm, $\gamma = 67°19'$;

2) $a = 22.9$ cm, $c = 16.9$ cm, $\beta = 39°52'$;

3) $b = 3.8$ cm, $c = 5.2$ cm, $\alpha = 33°36'$;

4) $a = 13.2$ cm, $b = 5$ cm, $\gamma = 26°13'$;

5) $b = 1.55$ cm, $c = 2.15$ cm, $\alpha = 71°34'$.

Rješenje.   **1)**

$a = 42 \text{cm}$

$b = 37.1 \text{cm}$

$\gamma = 67°19'$

$c, \ \alpha, \ \beta = ?$

$c^2 = a^2 + b^2 - 2ab \cos\gamma = 44 \text{cm}$

$\cos\alpha = \dfrac{b^2 + c^2 - a^2}{2bc} = 0.474274$

$\alpha = 61°39'$

$\beta = 180° - \alpha - \gamma = 51°2'.$

2)

$a = 22.9 \text{cm}$

$c = 16.9 \text{cm}$

$\beta = 39°52'$

$b, \ \alpha, \ \gamma = ?$

$b^2 = a^2 + c^2 - 2ac\cos\beta = 14.7 \text{cm}$

$\cos\alpha = \dfrac{b^2 + c^2 - a^2}{2bc} = -0.04570704021$

$\alpha = 92°40'$

$\gamma = 180° - \alpha - \beta = 47°28'.$

3)

$b = 3.8 \text{cm}$

$c = 5.2 \text{cm}$

$\alpha = 33°36'$

$a, \ \beta, \ \gamma = ?$

$a^2 = b^2 + c^2 - 2bc\cos\alpha = 2.926 \text{cm}$

$\cos\beta = \dfrac{a^2 + c^2 - b^2}{2ac} = 0.69540578$

$\beta = 45°57'$

$\gamma = 180° - \alpha - \beta = 100°27'.$

4)

$a = 13.2 \text{cm}$

$b = 5 \text{cm}$

$\gamma = 26°13'$

$c, \ \alpha, \ \beta = ?$

$c^2 = a^2 + b^2 - 2ab\cos\gamma = 8.99 \text{cm}$

$\cos\alpha = \dfrac{b^2 + c^2 - a^2}{2bc} = -0.76106674$

$\alpha = 139°34'23''$

$\beta = 180° - \alpha - \gamma = 14°13'.$

5)

$b = 1.55\text{cm}$

$c = 2.15\text{cm}$

$\alpha = 71°34'$

$a,\ \beta,\ \gamma = ?$

$a^2 = b^2 + c^2 - 2bc\cos\alpha = 2.22\text{cm}$

$\cos\beta = \dfrac{a^2 + c^2 - b^2}{2ac} = 0.74883721$

$\beta = 41°28'53''$

$\gamma = 180° - \alpha - \beta = 66°57'7''.$