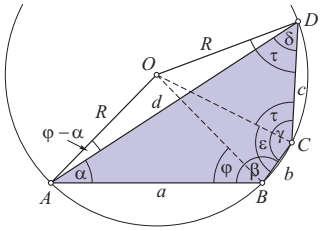
Zadatak 15. U tetivnom je četverokutu $a = 7$ cm, $c = 4$ cm, $\alpha = 35°6'54''$, $R = 5$ cm. Izračunaj b, d i β.

Rješenje.



$a = 7\,\text{cm}$

$c = 4\,\text{cm}$

$\alpha = 35°6'54''$

$R = 5\,\text{cm}$

$b,\ d,\ \beta = ?$

$\alpha + \gamma = \beta + \delta = 180°$

$\gamma = 180° - \alpha = 144°53'6''$

$\triangle OCD$ jednakokračan $\Longrightarrow \cos\tau = \dfrac{\frac{c}{2}}{R}, \quad \tau = 66°25'19''$

$\varepsilon = \gamma - \tau = 78°27'47''$

$\triangle OBC$ jednakokračan $\Longrightarrow \cos\varepsilon = \dfrac{\frac{b}{2}}{R} \Longrightarrow b = 2R\cos\varepsilon = 2\,\text{cm}$

$\triangle OAB$ jednakokračan $\Longrightarrow \cos\varphi = \dfrac{\frac{a}{2}}{R} \Longrightarrow \varphi = 45°34'23''$

$\beta = \varphi + \varepsilon = 124°2'10''$

$\delta = 180° - \beta = 55°57'50''$

$\dfrac{\frac{d}{2}}{R} = \cos(\varphi - \alpha) \Longrightarrow d = 2R\cos(\varphi - \alpha) = 9.83\,\text{cm}.$