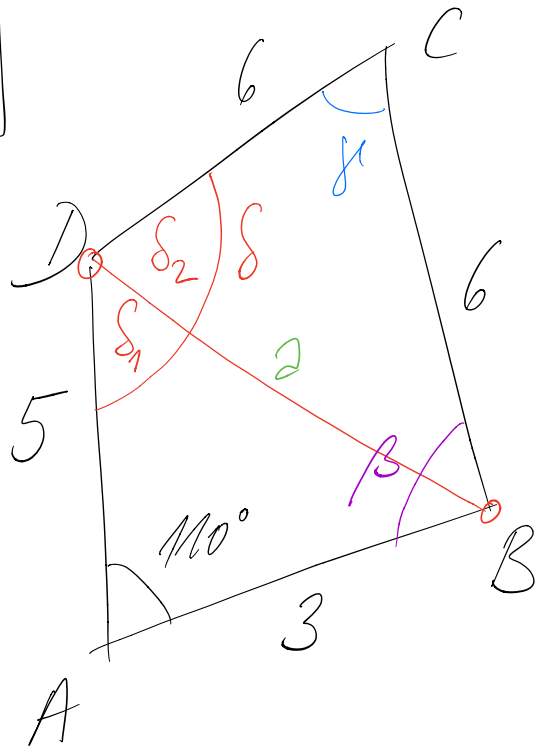


5.8



2C

DB à tracer.  
Vu que DB ne coupe pas l'angle en A, on ne perd pas d'info.

$$a^2 = 5^2 + 3^2 - 2 \cdot 5 \cdot 3 \cdot \cos 110^\circ = 25 + 9 - 30 \cos 110^\circ$$

$$\Leftrightarrow a^2 = 34 - 30 \cdot \cos 110^\circ \approx 34 - (-10,260604)$$

$$\approx 44,2606$$

$$\Rightarrow a \approx 6,65286 \approx 6,653$$

$$\text{De plus, } \frac{3}{\sin \delta_1} = \frac{a}{\sin 110^\circ} \Leftrightarrow \frac{3}{\sin \delta_1} \approx \frac{6,653}{\sin 110^\circ}$$

$$\Rightarrow \frac{3}{\sin \delta_1} \approx 7,07983 \Rightarrow \sin \delta_1 \approx \frac{3}{7,07983}$$

$$\Rightarrow \sin \delta_1 \approx 0,423739$$

$$\delta_1 \approx 25,071^\circ$$

On a également:  $\cancel{6}^2 = 2^2 + \cancel{6}^2 - 2 \cdot 2 \cdot 6 \cdot \cos \delta_2$

$$\Rightarrow 0 = 2^2 - 2 \cdot 2 \cdot 6 \cdot \cos \delta_2$$

$$\Leftrightarrow 12 \cdot 2 \cdot \cos \delta_2 = 2^2 \Rightarrow \cos \delta_2 = \frac{2}{12}$$

$$\Rightarrow \cos \delta_2 \approx \frac{6,65286}{12} \approx 0,55441$$

$$\Rightarrow \delta_2 \approx 56,33^\circ$$

$$\Rightarrow \underline{\delta = \delta_1 + \delta_2 \approx 81,4^\circ}$$

Et encore:  $2^2 = 6^2 + 6^2 - 2 \cdot 6 \cdot 6 \cdot \cos \delta'$

$$\Leftrightarrow 2^2 = 72 - 72 \cos \delta'$$

$$\Leftrightarrow 2^2 - 72 = -72 \cos \delta'$$

$$\Leftrightarrow \cos \beta' = \frac{2^2 - 72}{-72} \approx \frac{6,65286^2 - 72}{-72}$$

$$\Rightarrow \cos \beta' \approx 0,38527$$

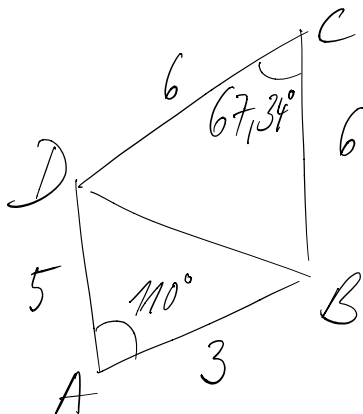
$$\beta' \approx \underline{67,34^\circ}$$

Finalement,  $\beta = 360^\circ - 110^\circ - \delta - \delta'$

$$\approx 250^\circ - 81,4^\circ - 67,3^\circ$$

$$\approx 101,3^\circ$$

On connaît tous les angles. Calculons encore l'aire de ABCD.



$$A_{\triangle ABD} = \frac{1}{2} 5 \cdot 3 \cdot \sin 110^\circ$$

$$A_{\triangle CDB} = \frac{1}{2} 6 \cdot 6 \cdot \sin 67,34^\circ$$

$$\Rightarrow A_{\triangle ABD} \approx 7,0477 \text{ u}^2$$

$$A_{\triangle CDB} \approx 16,6105 \text{ u}^2$$

$$\begin{aligned} \Rightarrow A_{ABCD} &\approx 7,0477 + 16,6105 \text{ u}^2 \\ &\approx 23,6582 \approx \underline{\underline{23,7 \text{ u}^2}} \end{aligned}$$