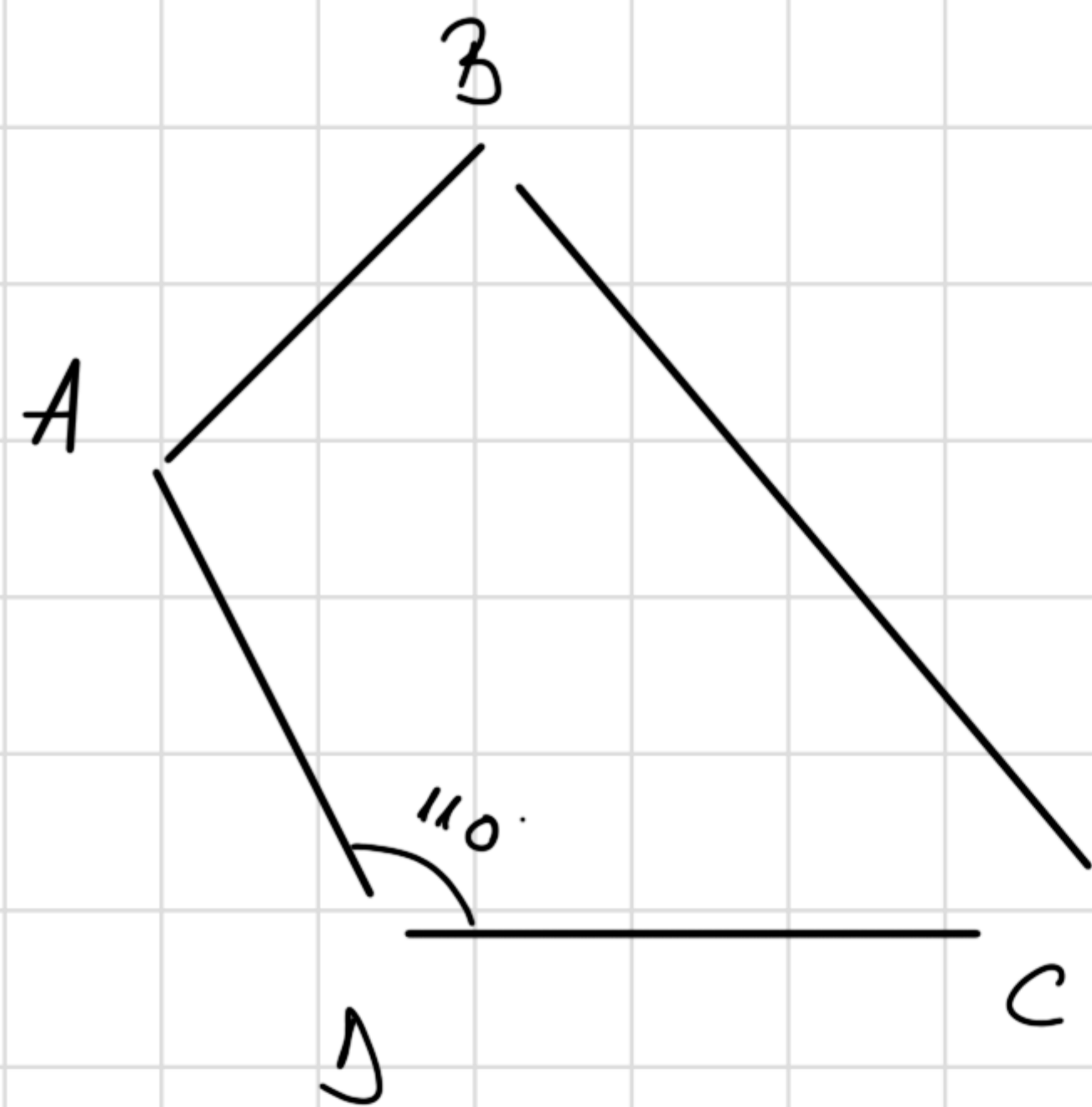


Patrulaterul convex

① Suma măsurilor unghiurilor într-un patruleter convex este 360° .

① $ABCD$ p. cx
 $\sphericalangle D = 110^\circ$
 $\sphericalangle C = 3 \sphericalangle B$
 $\sphericalangle A : \sphericalangle B = 2 \text{ } \& \text{ } 10$

$\sphericalangle A, \sphericalangle B, \sphericalangle C, \sphericalangle D$



$\sphericalangle D = 110^\circ$ $\sphericalangle C = 3 \sphericalangle B$ $\sphericalangle A : \sphericalangle B = 2 \text{ } \& \text{ } 10$ *Teorema împărțirii cu R*

$\sphericalangle A = 2 \sphericalangle B + 10$

Teorema împărțirii cu rest:

$$D = \uparrow \cdot C + R$$

$$\sphericalangle A + \sphericalangle B + \sphericalangle C + \sphericalangle D = 360$$

$$\underline{\underline{2A+10}} + \underline{\underline{4B}} + \underline{\underline{3C}} + 110 = 360$$

$$6A + 120 = 360$$

$$6A = 240$$

$$A = 40$$

$$4A = 2 \cdot 4B + 10 =$$
$$= 2 \cdot 40 + 10 = 90$$

$$4C = 3 \cdot 4B = 3 \cdot 40 = 120$$

② ABCD pex

$$\{\hat{A}, \hat{B}, \hat{C}\} \text{ dp } \{4, 3, 2\}$$

$$\{\hat{C}, \hat{D}\} \text{ ip } \{6, 4\}$$

$$4A, 4B, 4C, 4D$$

$$\frac{4A}{4} = \frac{4B}{3} = \frac{4C}{2} = k$$

$$\begin{aligned} &\rightarrow 4A = 4k \\ &\rightarrow 4B = 3k \\ &\rightarrow 4C = 2k \\ &4D = 3k \end{aligned}$$

$$6 \cdot 4C = 4 \cdot 4D$$

$$6 \cdot 2k = 4 \cdot 4D \Rightarrow \boxed{4D = 12k : 4 = 3k}$$

$$\angle A + \angle B + \angle C + \angle D = 360^\circ$$

$$4k + 3k + 2k + 3k = 360$$

$$12k = 360$$

$$k = 360 : 12$$

$$k = 30$$

$$\angle A = 4 \cdot 30 = 120^\circ$$

$$\angle B = 3 \cdot 30 = 90^\circ$$

$$\angle C = 2 \cdot 30 = 60^\circ$$

$$\angle D = 3 \cdot 30 = 90^\circ$$

③ ABCD p. CX

$\{\angle A, \angle B, \angle C, \angle D\}$ ip

$\{0, \overline{5}, 0, 2, 0, (3), 0, 8\}$

$\angle A, \angle B, \angle C, \angle D$

$$0,5 = \frac{5}{10} = \frac{1}{2}$$

$$0,(3) = \frac{3}{9} = \frac{1}{3}$$

$$0,2 = \frac{2}{10} = \frac{1}{5}$$

$$0,8 = \frac{8}{10} = \frac{4}{5}$$

$$\{ \neq A, \neq B, \neq C, \neq D \} \text{ ip } \left\{ \frac{1}{2}, \frac{1}{5}, \frac{1}{3}, \frac{4}{5} \right\}$$

$$\frac{\neq A}{\frac{1}{2}} = \frac{\neq B}{\frac{1}{5}} = \frac{\neq C}{\frac{1}{3}} = \frac{\neq D}{\frac{4}{5}}$$

$$\{ x, y, z \} \text{ ip } \{ a, b, c \}$$

$$\Rightarrow \frac{x}{a} = \frac{y}{b} = \frac{z}{c} = k$$

$$\frac{1}{\frac{4}{5}} = 1 : \frac{4}{5} = 1 \cdot \frac{5}{4} = \frac{5}{4}$$

$$\frac{\neq A}{2} = \frac{\neq B}{5} = \frac{\neq C}{3} = \frac{\neq D}{\frac{5}{4}} = k$$

$$\begin{aligned} \neq A &= 2k = 2 \cdot 32 = 64 & \neq C &= 3k = 3 \cdot 32 = 96 \\ \neq B &= 5k = 5 \cdot 32 = 160 & \neq D &= \frac{5}{4}k = \frac{5}{4} \cdot 32 = 40 \end{aligned}$$

$$\angle A + \angle B + \angle C + \angle D = 360^\circ$$

$$2k + 5k + 3k + \frac{5k}{4} = 360^\circ$$

$$\frac{4}{10k} + \frac{5k}{4} = 360$$

$$\frac{40k}{4} + \frac{5k}{4} = 360$$

$$\frac{45k}{4} = 360$$

$$45k = 360 \cdot 4$$

$$k = \frac{360 \cdot 4}{45} = 32$$

④

ABCD p. cx

$\triangle ADC$ dr is

($\angle ADC = 90^\circ$)

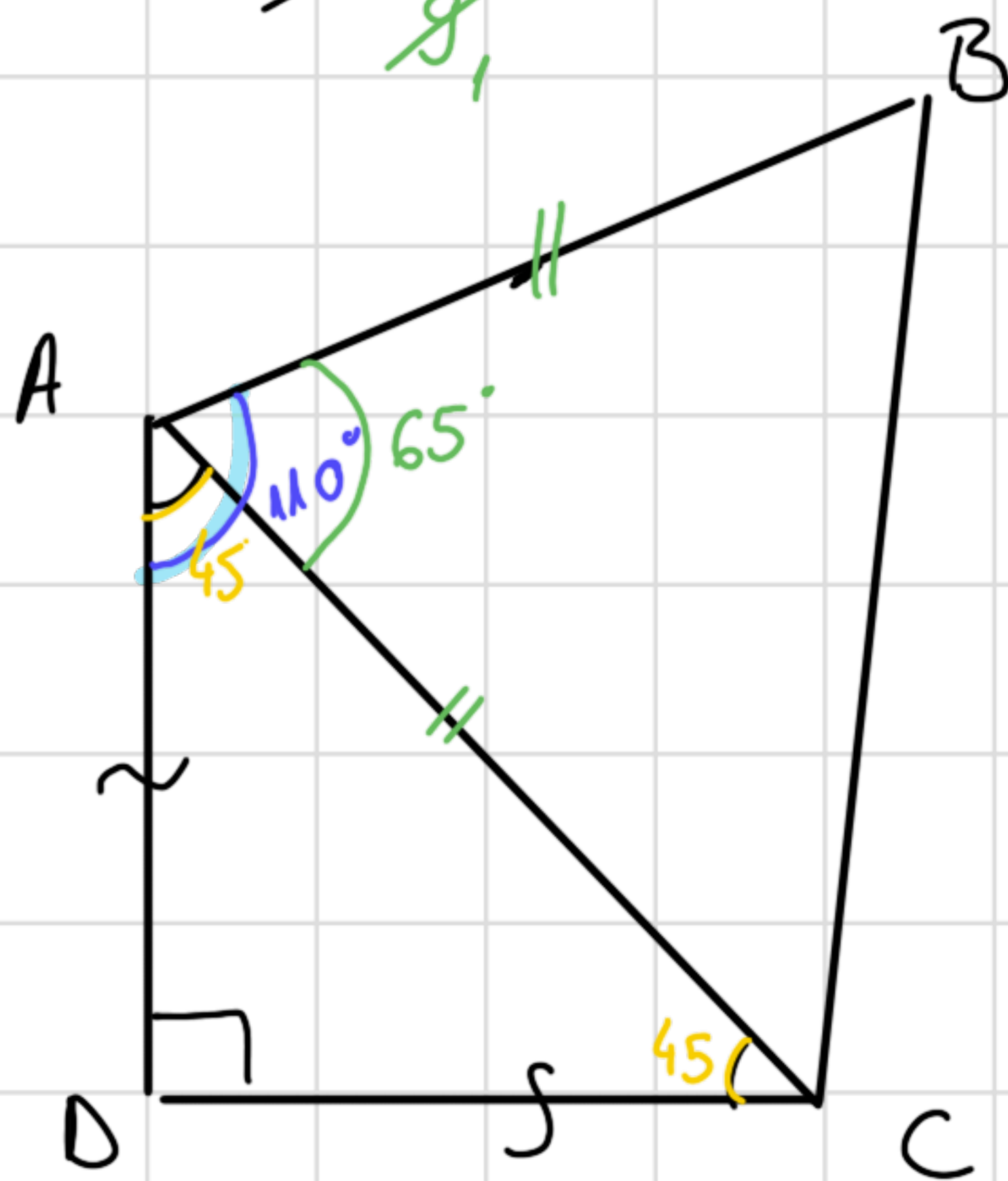
$\overline{AC} = \overline{AB}$

$\angle DAB = 110^\circ$

$\angle A, \angle B, \angle C, \angle D$

ce fel de patr.
este?

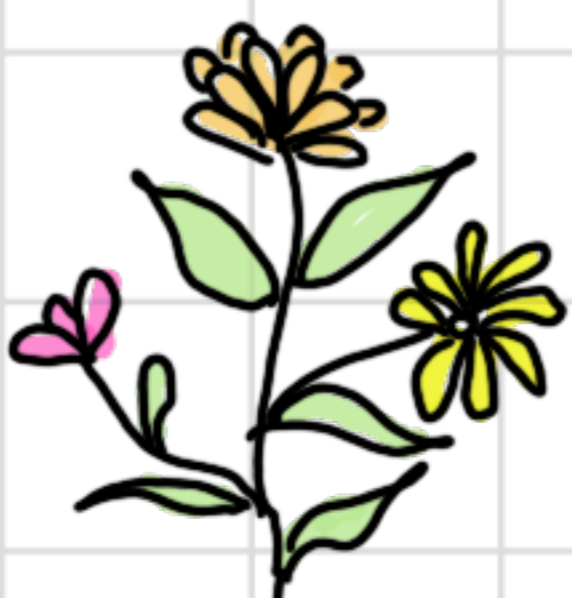
(concau / convex?)



$\triangle ADC$ dr is \Rightarrow

$\Rightarrow \angle CAD = \angle ACD = 45^\circ$

$$\begin{aligned} \angle BAC &= \angle BAD - \angle CAD = \\ &= 110 - 45 = 65^\circ \end{aligned}$$



$$AB \equiv AC \Rightarrow \triangle ABC \text{ is } \Rightarrow$$

$$\Rightarrow \sphericalangle ABC \equiv \sphericalangle ACB$$

$$\triangle ABC : \sphericalangle ABC + \sphericalangle BAC + \sphericalangle ACB = 180$$

$$2 \sphericalangle ABC + 65 = 180$$

$$2 \sphericalangle ABC = 115$$

$$\sphericalangle ABC = 115 : 2$$

$$\sphericalangle ABC = 114^{\circ} 60' : 2$$

$$\sphericalangle ABC = 57^{\circ} 30' = \sphericalangle ACB$$

$$\sphericalangle BCD = \sphericalangle ACD + \sphericalangle BCA = 45^{\circ} + 57^{\circ} 30' = 102^{\circ} 30'$$

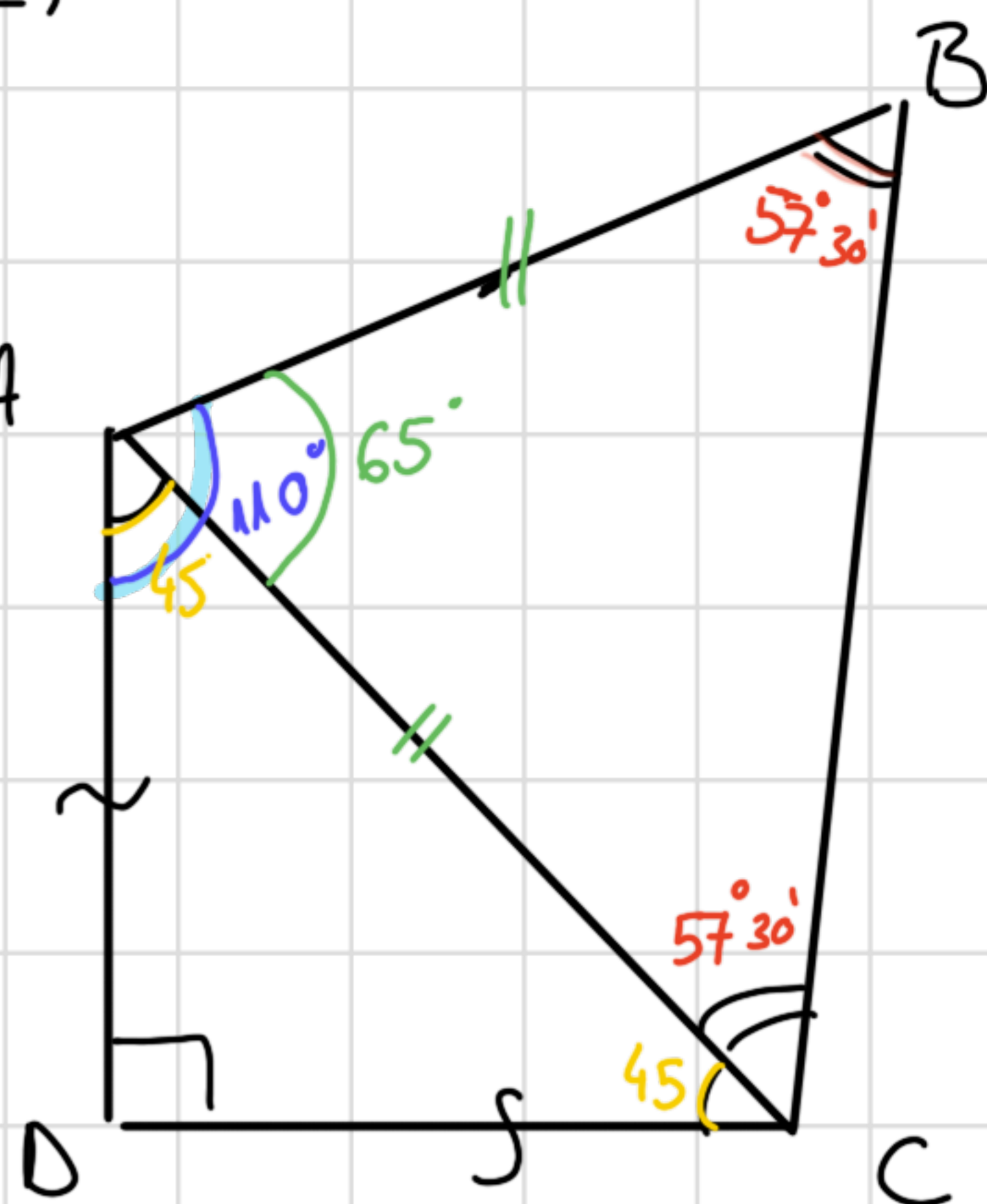
$$\sphericalangle A = 110$$

$$\sphericalangle B = 57^{\circ} 30'$$

$$\sphericalangle C = 102^{\circ} 30'$$

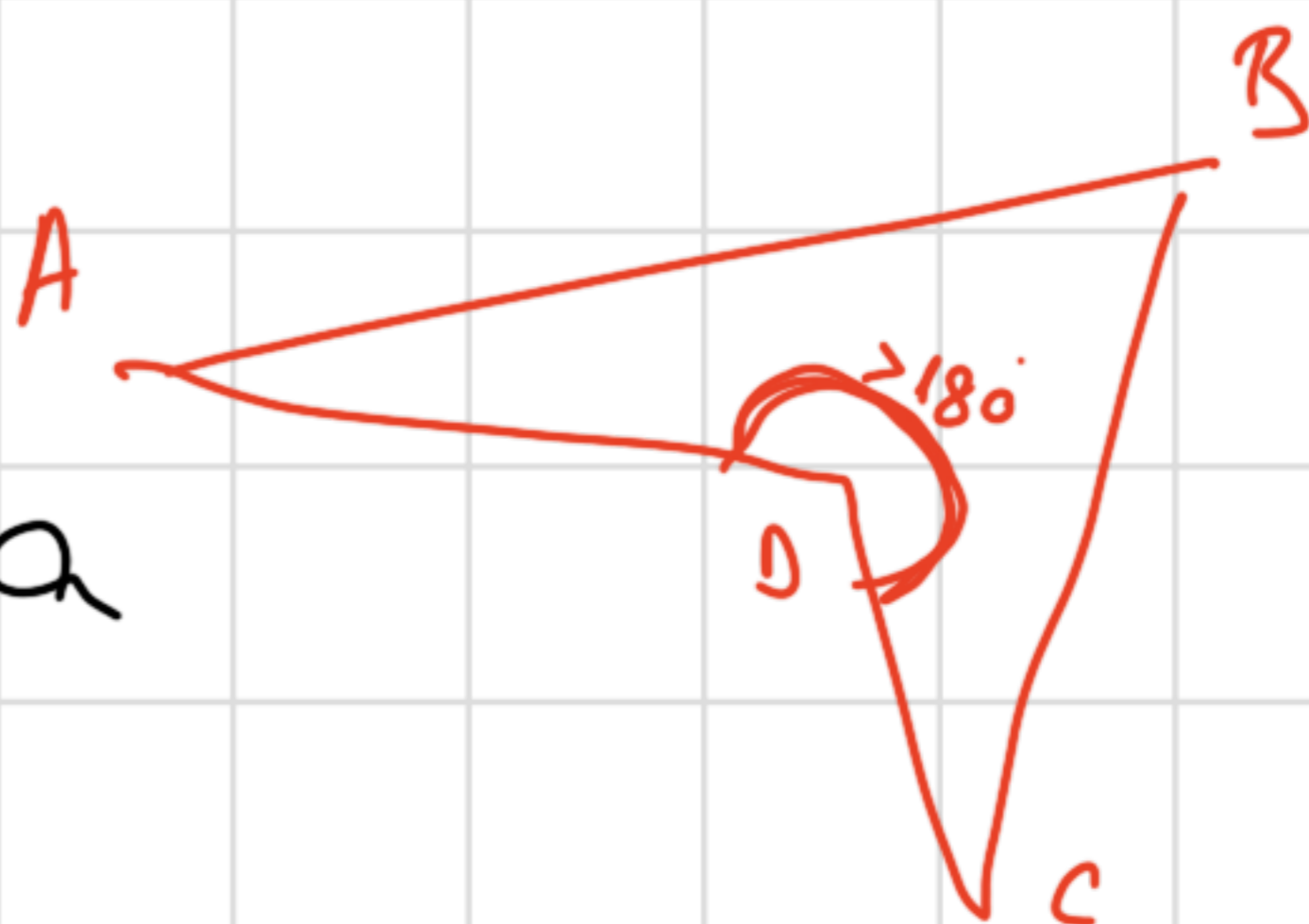
$$\sphericalangle D = 90$$

patrulater convex



Patrulaterul convex are toate unghiurile mai mici de 180° .

Patrulaterul concav are un unghi mai mare de 180° .



De terminat teama la algebră

p 53 ex 1 a, b, e
4, 6, 9.