

# VIERECKE-Lösungen

①

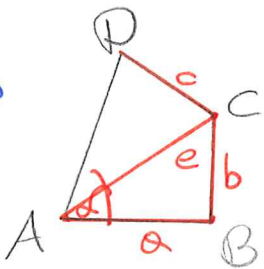
1a)  $\angle = 360^\circ - 20^\circ - 111^\circ - 70^\circ = \underline{159^\circ}$

b)  $\angle = 360^\circ - 166^\circ - 14^\circ - 71^\circ = \underline{81^\circ}$

c)  $\beta = 360^\circ - 100^\circ - 100^\circ - 100^\circ = \underline{60^\circ}$

d)  $\gamma = 360^\circ - 45^\circ - 88^\circ - 177^\circ = \underline{50^\circ}$

2a)

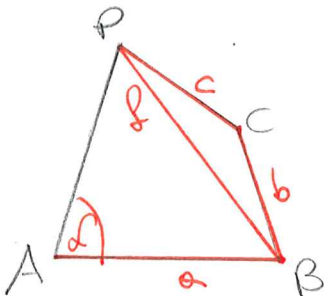


①  $\triangle ABC$ : SSS

② Winkel  $\angle$ : longer Stahl

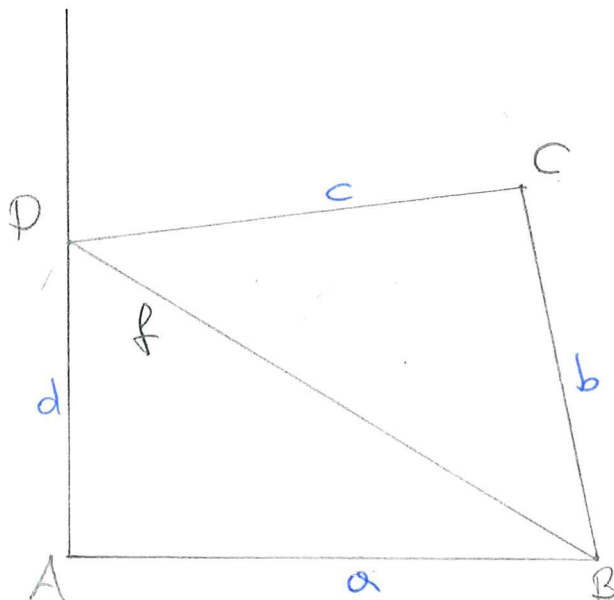
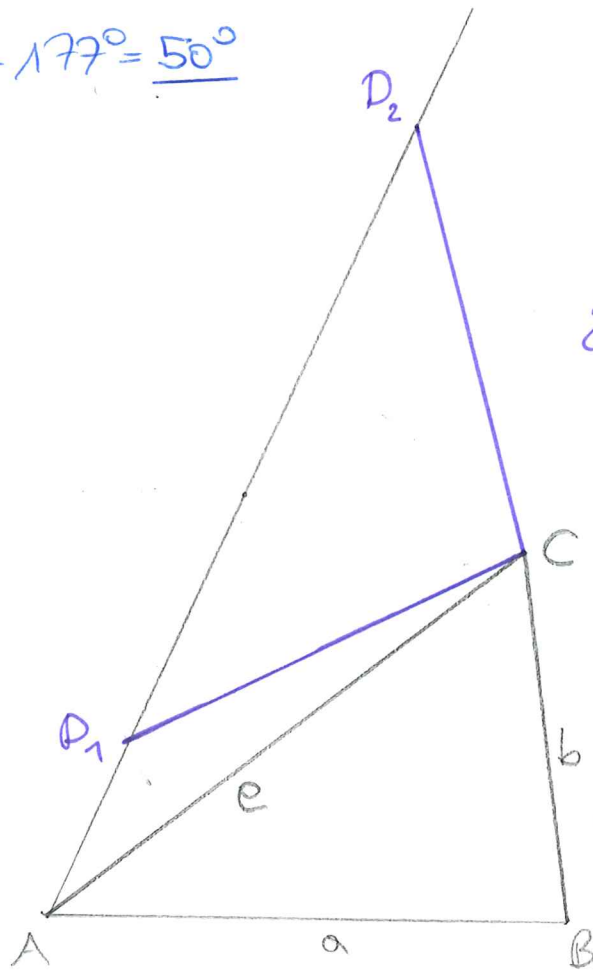
③ c abschlagen

2b)

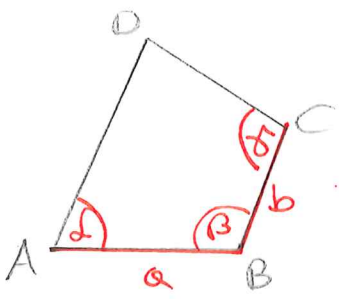


①  $\triangle ABD$ : SSW:  $f > a \checkmark$

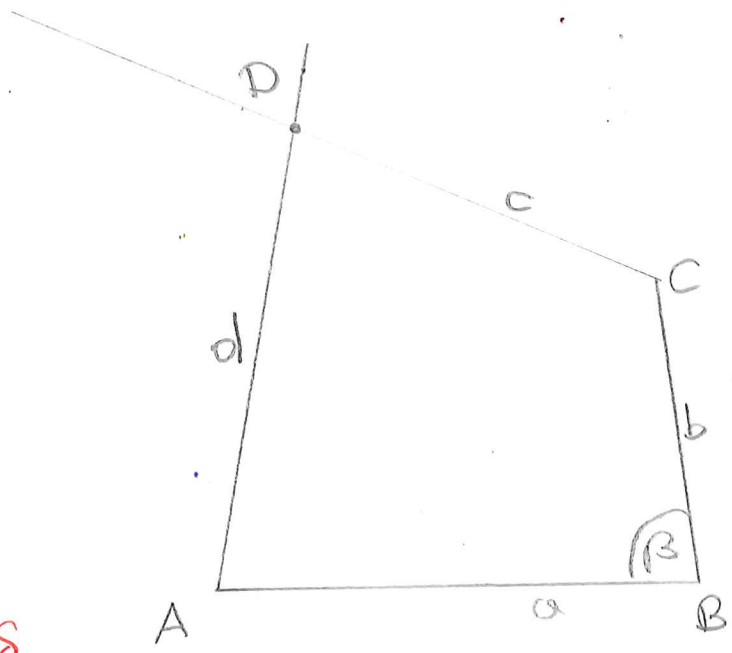
②  $\triangle BCD$ : SSS



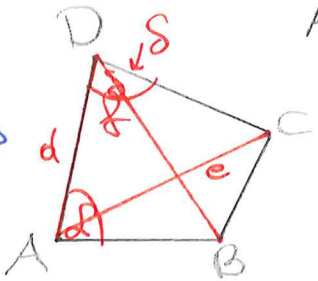
2G



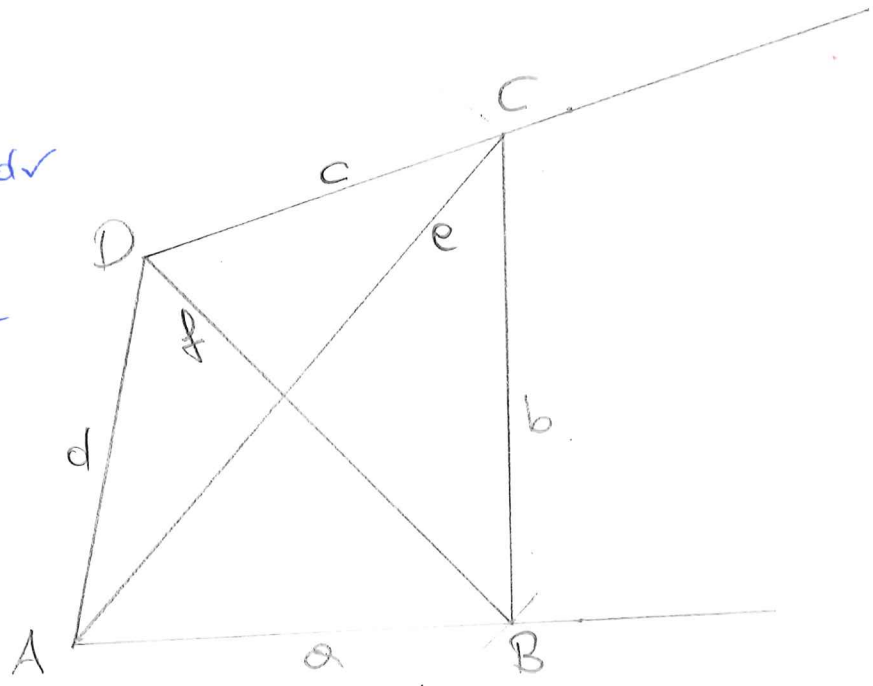
- ① Δ ABC: SWS
- ② α, γ zeichnen
- Schnittpunkt = D

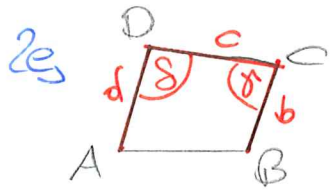


2G

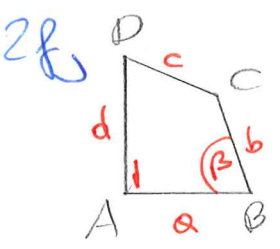
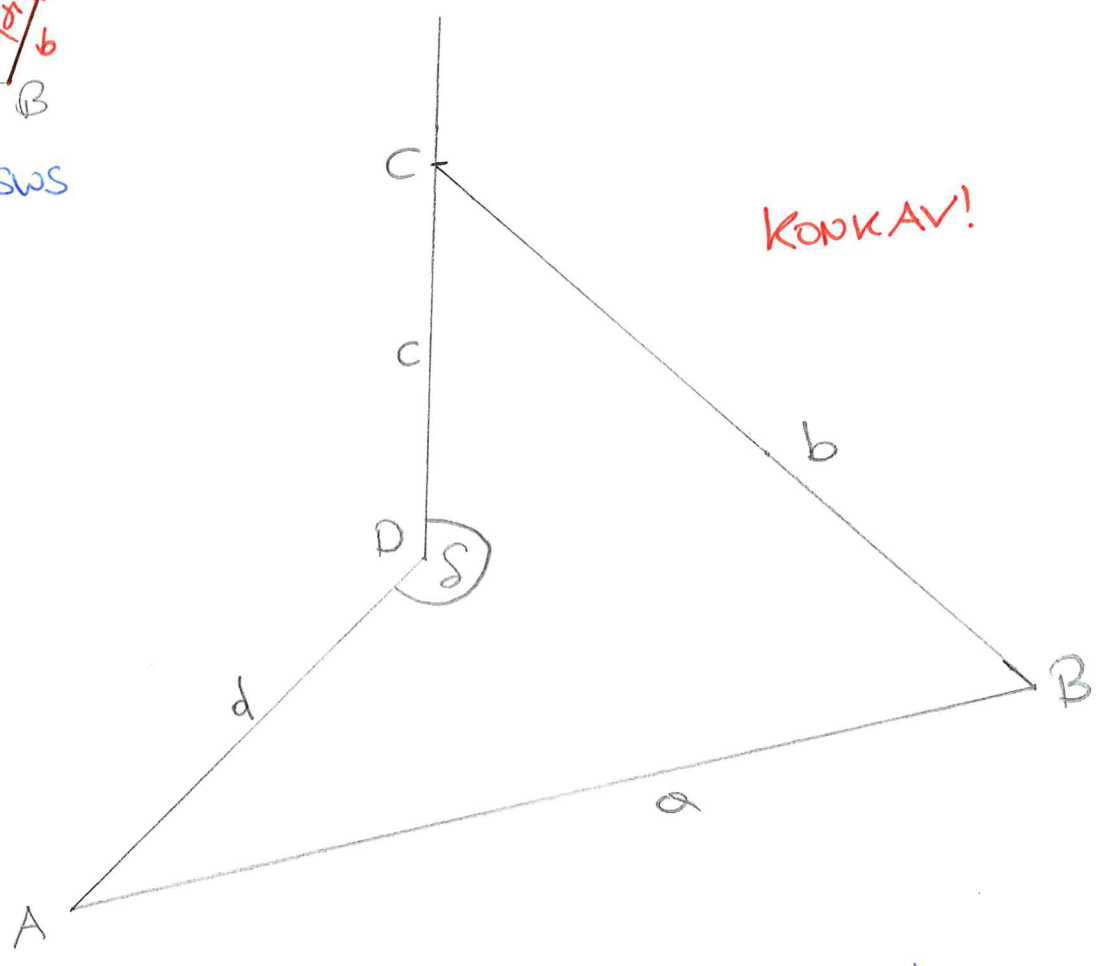


- ① Δ ABD: SSW: e > d < v
- ② Winkel δ + Stahl
- ③ e abschlagen = C

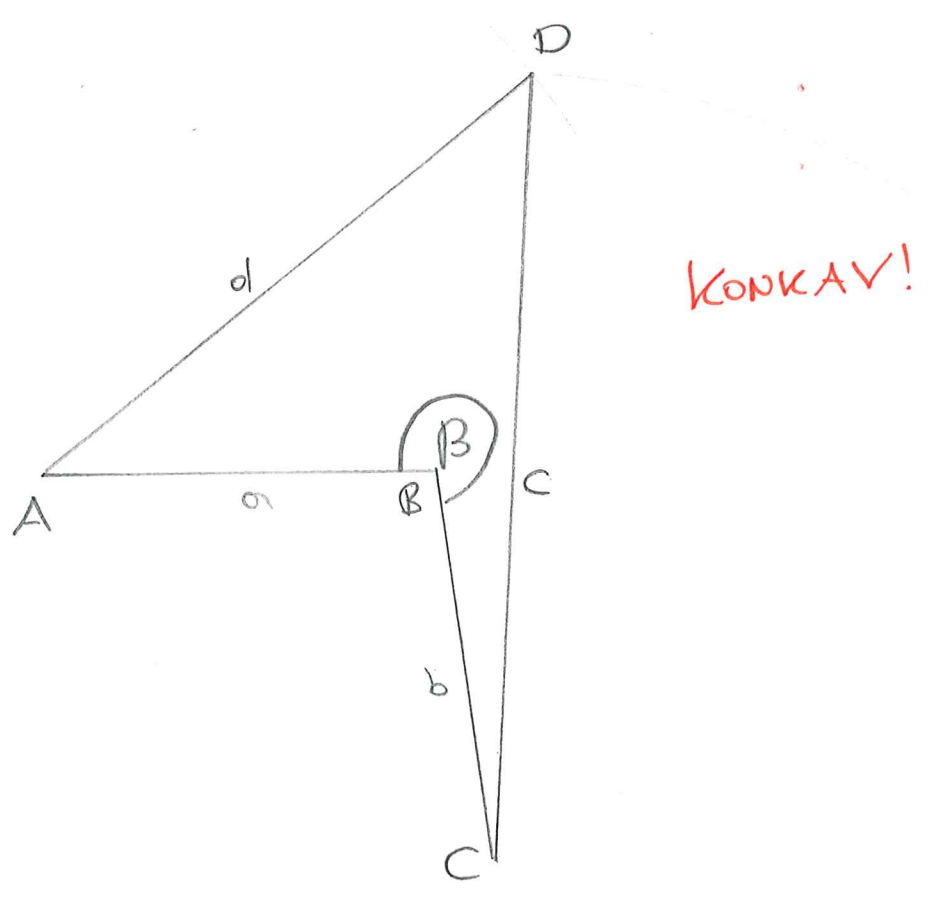




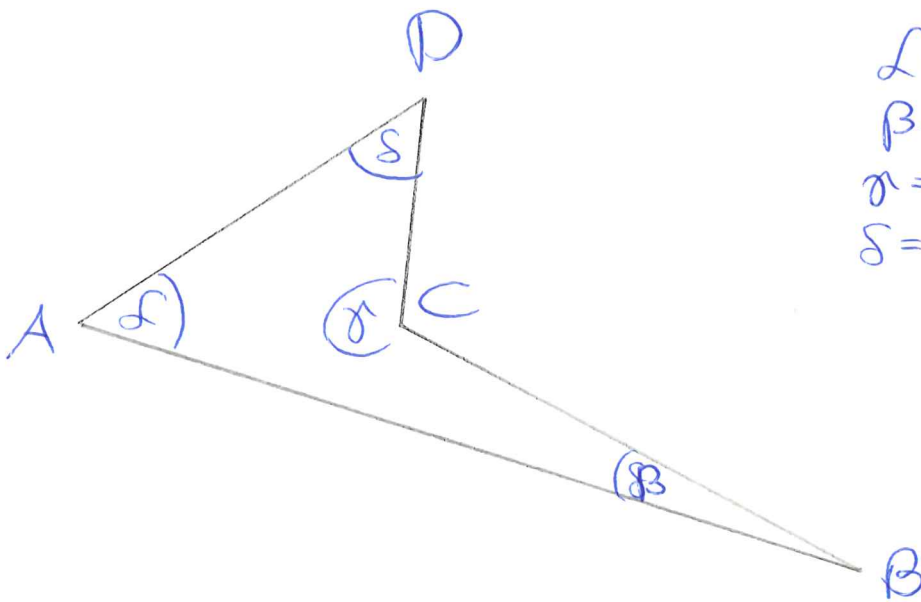
- ①  $\triangle ADC: SWS$
- ②  $\gamma + b$



- ①  $\triangle ABC: SWS$
- ②  $\triangle ADC: SSS$



③



④

$$\left. \begin{array}{l} \alpha = 50^\circ \\ \beta = 10^\circ \\ \gamma = 248^\circ \\ \delta = 52^\circ \end{array} \right\} \oplus = 360^\circ \checkmark$$

4)  $\alpha = 360^\circ - 20^\circ - 79^\circ - 70^\circ = 191^\circ \rightarrow \alpha > 180^\circ$  KONKAV!

5)  $A = (1|1)$

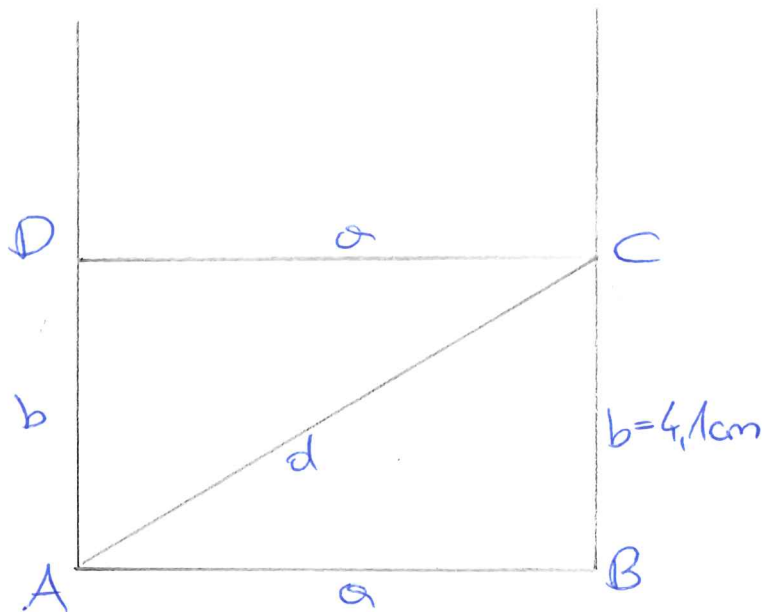
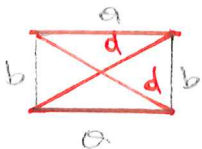
$B = (6|1)$

$C = (3|3)$

$D = (4|7)$

$\Rightarrow$  KONKAV!

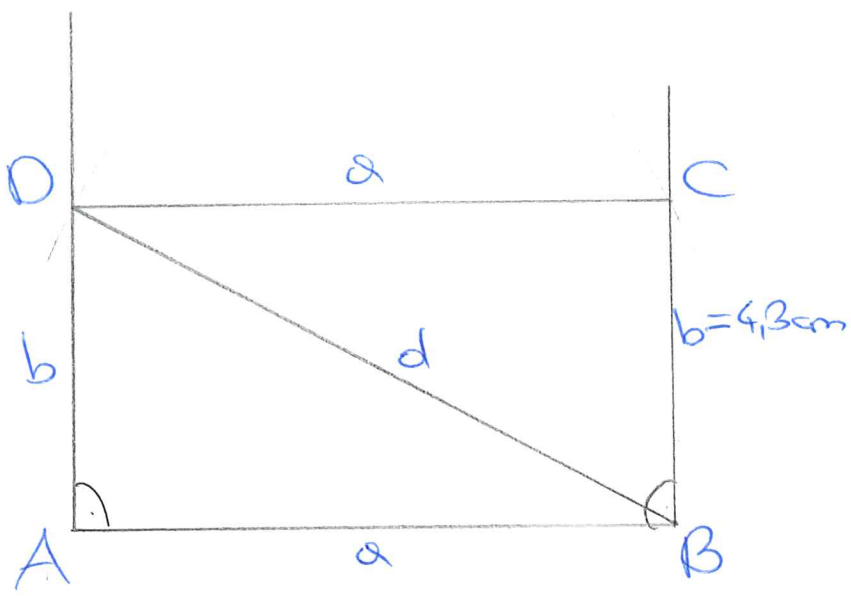
6) es



$$U = 2 \cdot (4,1 + 6,9) = \underline{\underline{22 \text{ cm}}}$$

$$A = 4,1 \cdot 6,9 = \underline{\underline{28,29 \text{ cm}^2}}$$

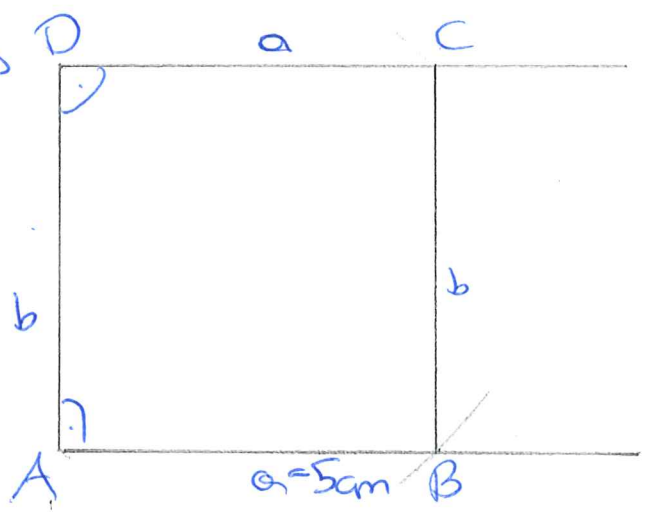
6b



$$U = 2 \cdot (4,3 + 8) = \underline{24,6 \text{ cm}}$$

$$A = 4,3 \cdot 8 = \underline{34,4 \text{ cm}^2}$$

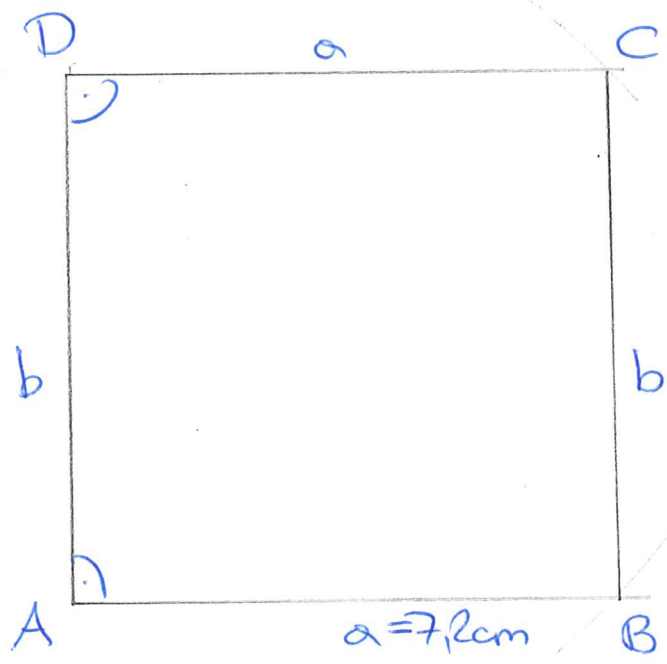
6c



$$U = 2 \cdot (5 + 5,1) = \underline{20,2 \text{ cm}}$$

$$A = 5 \cdot 5,1 = \underline{25,5 \text{ cm}^2}$$

6d



$$U = 2 \cdot (7 + 7,2) = \underline{28,4 \text{ cm}}$$

$$A = 7 \cdot 7,2 = \underline{50,4 \text{ cm}^2}$$

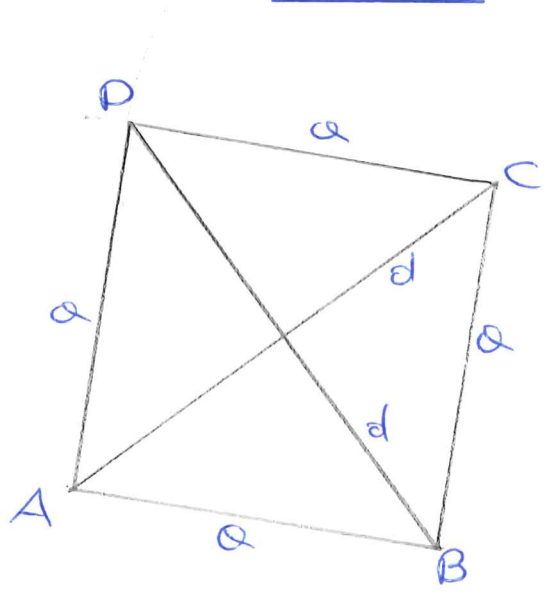
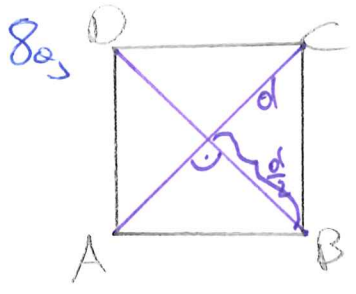
6

7a)  $u = 2(a+b)$   
 $60 = 2 \cdot (10+b) \quad | :2$   
 $30 = 10+b \quad | -10$   
 $20 = b$   
 $b = 20 \text{ cm}$

b)  $1000 = 2 \cdot (a+100) \quad | :2$   
 $500 = a+100 \quad | -100$   
 $400 = a$   
 $a = 400 \text{ cm}$

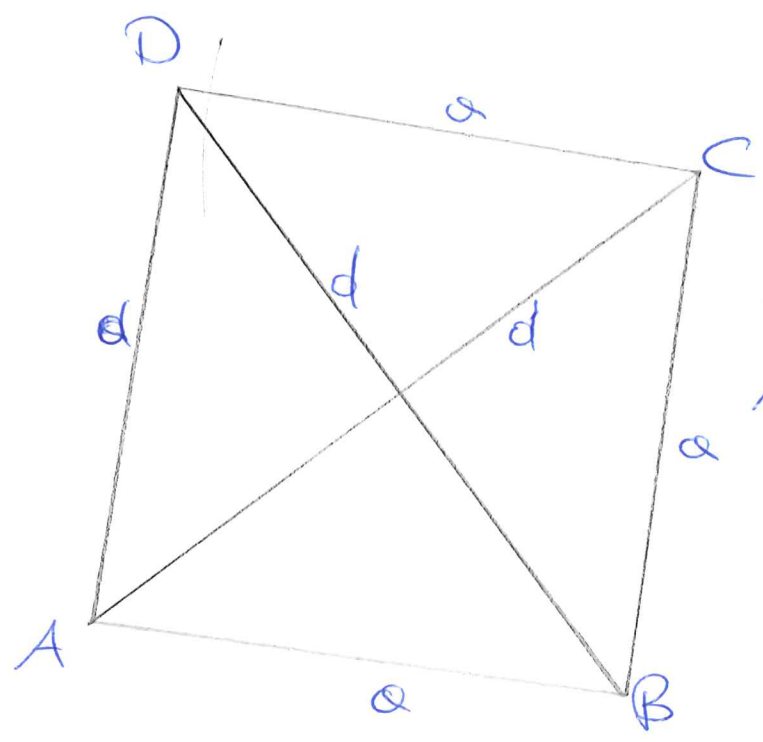
c)  $A = a \cdot b$   
 $40 = a \cdot 8 \quad | :8$   
 $5 = a$   
 $a = 5 \text{ cm}$

d)  $300 = 15 \cdot b \quad | :15$   
 $20 = b$   
 $b = 20 \text{ cm}$



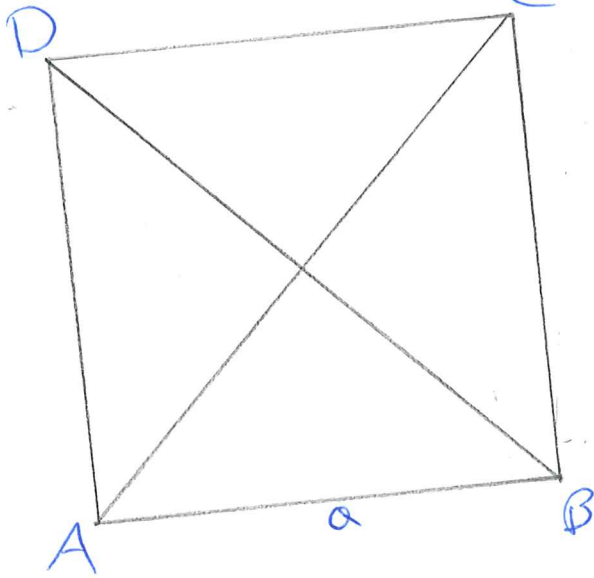
$a = 4,9 \text{ cm}$   
 $u = 4,9 \cdot 4 = \underline{19,6 \text{ cm}}$   
 $A = 4,9 \cdot 4,9 = \underline{\underline{24,01 \text{ cm}^2}}$

8b)



$a = 7,2 \text{ cm}$   
 $u = 7,2 \cdot 4 = \underline{28,8 \text{ cm}}$   
 $A = 7,2 \cdot 7,2 = \underline{\underline{51,84 \text{ cm}^2}}$

8c,



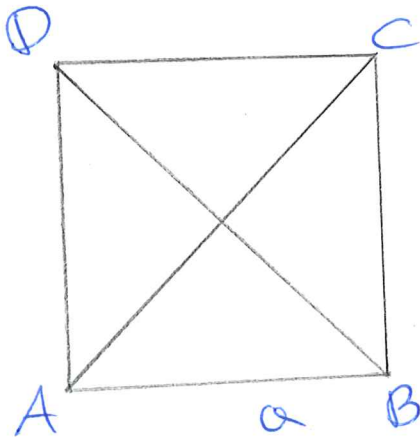
$$a = 6,2 \text{ cm}$$

$$U = 6,2 \cdot 4 = \underline{24,8 \text{ cm}}$$

$$A = 6,2 \cdot 6,2 = \underline{38,44 \text{ cm}^2}$$

⑦

8d,

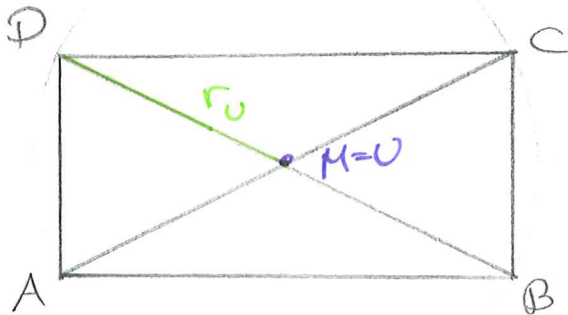


$$a = 4,2 \text{ cm}$$

$$\textcircled{1} U = 4,2 \cdot 4 = 16,8 \text{ cm}$$

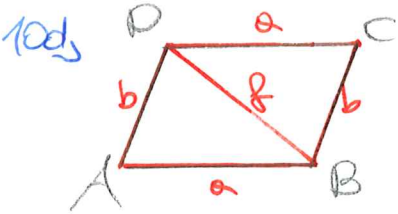
$$\textcircled{2} A = 4,2 \cdot 4,2 = \underline{17,64 \text{ cm}^2}$$

9 es Rechteck

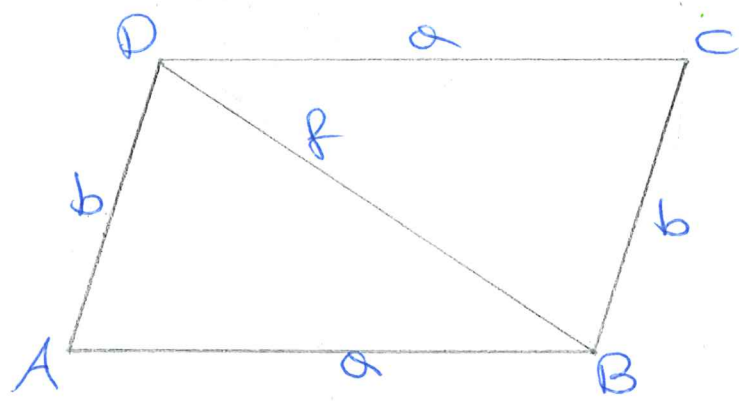




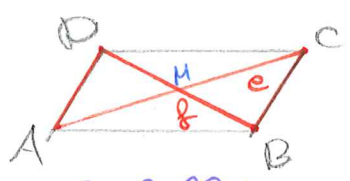




- ①  $\triangle ABD : SSS$
- ②  $\triangle BCD : SSS$

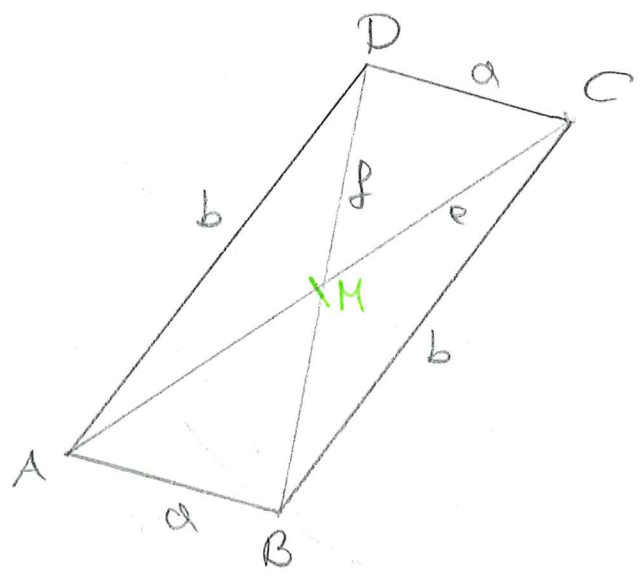


10e<sub>1</sub>

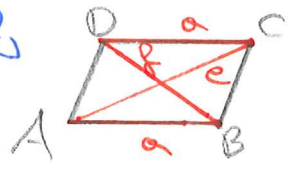


Diagonalen halbieren einander!

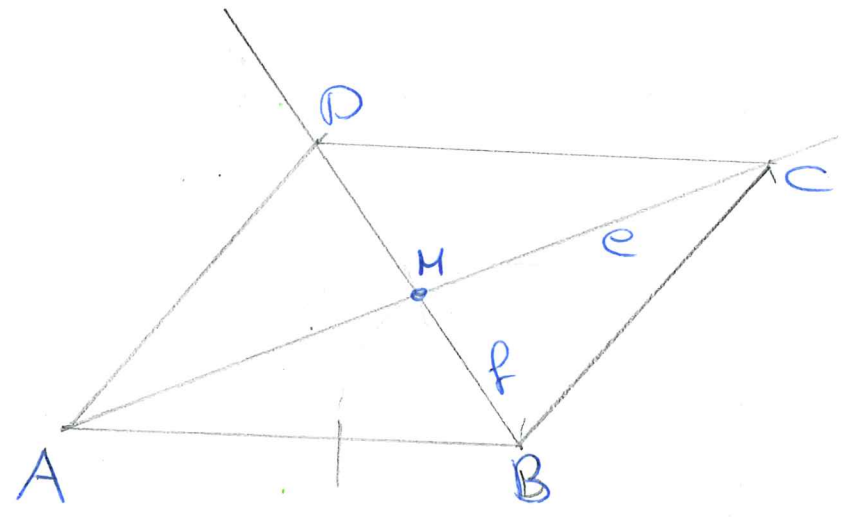
- ① e
- ②  $M_e$
- ③  $\triangle AMD, \triangle BMC : SSS$



10f<sub>1</sub>

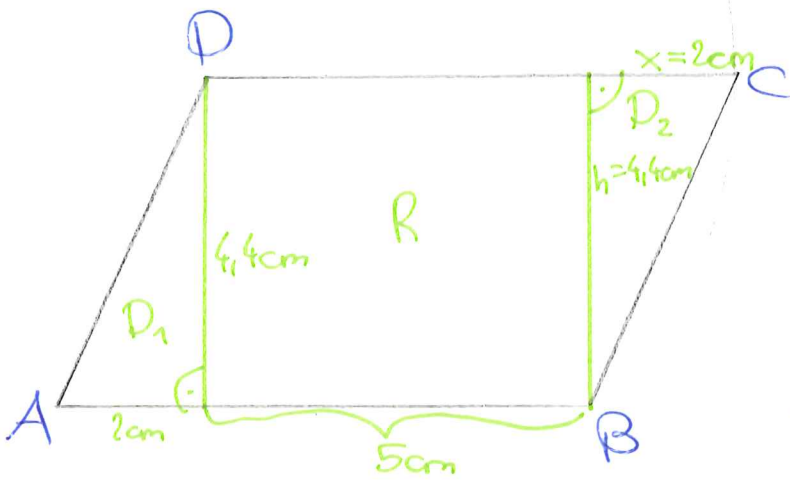


- ①  $\triangle ABM$
- ② Diagonalen zu  $C, D$



11a

10



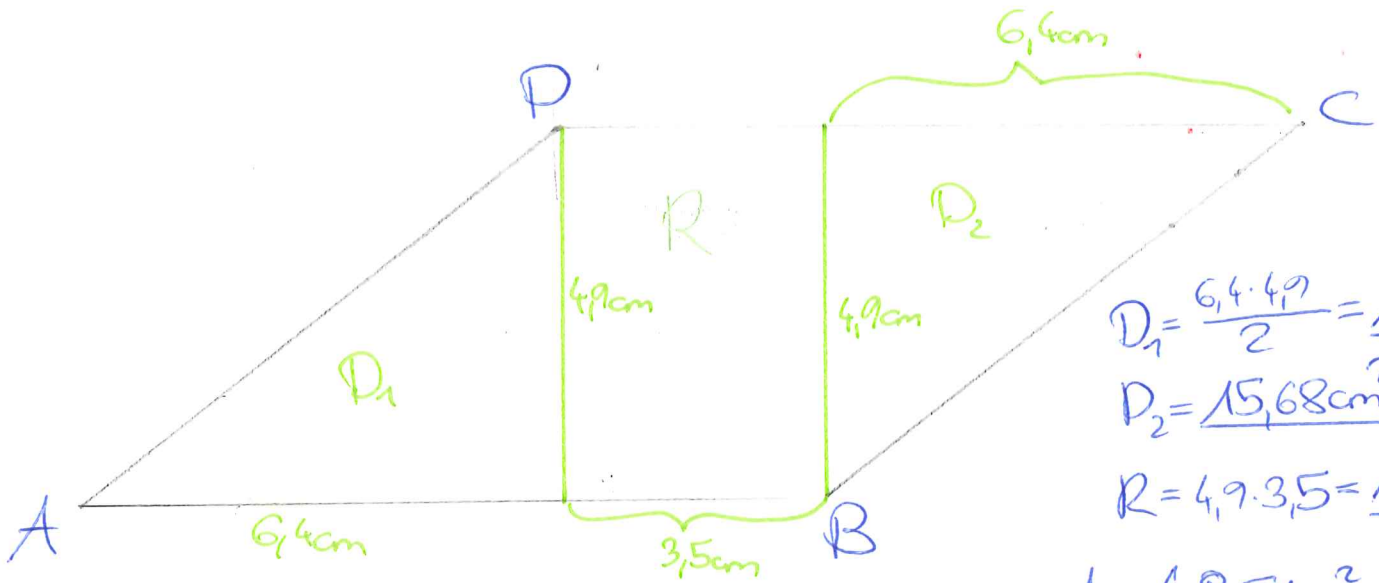
$$D_1 = \frac{4,4 \cdot 2}{2} = 4,4 \text{ cm}^2$$

$$D_2 = 4,4 \text{ cm}^2$$

$$R = 4,4 \cdot 5 = 22 \text{ cm}^2$$

$$A = 30,8 \text{ cm}^2$$

11b



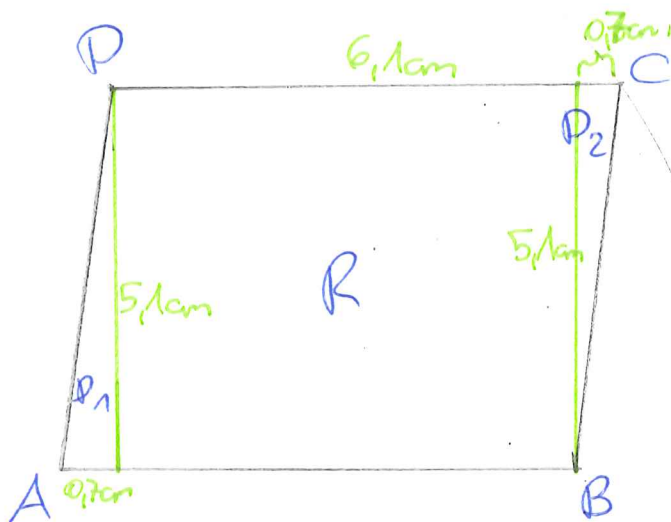
$$D_1 = \frac{6,4 \cdot 4,9}{2} = 15,68 \text{ cm}^2$$

$$D_2 = 15,68 \text{ cm}^2$$

$$R = 4,9 \cdot 3,5 = 17,15 \text{ cm}^2$$

$$A = 48,51 \text{ cm}^2$$

11c



$$D_1 = \frac{0,7 \cdot 5,1}{2} = 1,785 \text{ cm}^2$$

$$D_2 = 1,785 \text{ cm}^2$$

$$R = 6,1 \cdot 5,1 = 31,11 \text{ cm}^2$$

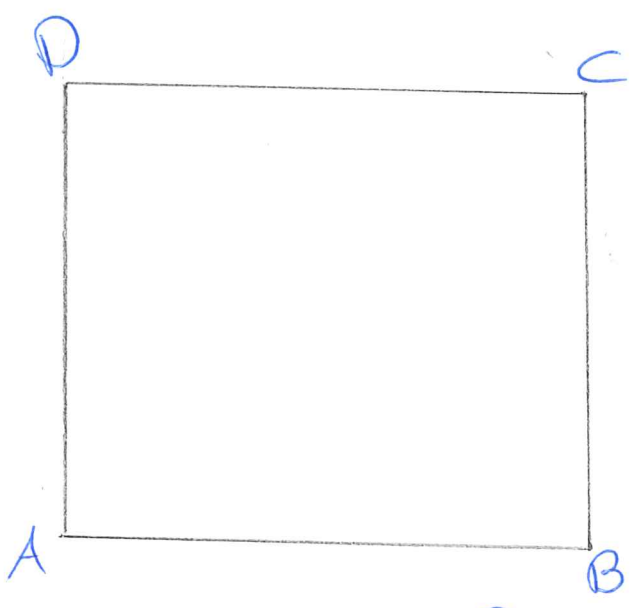
$$A = 34,68 \text{ cm}^2$$

12)  $a = 350 \text{ m} = 35000 \text{ cm} : 5000 = 7 \text{ cm}$

$b \hat{=} 6 \text{ cm}$

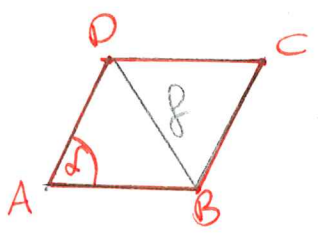
$e \hat{=} 9 \text{ cm}$

(11)



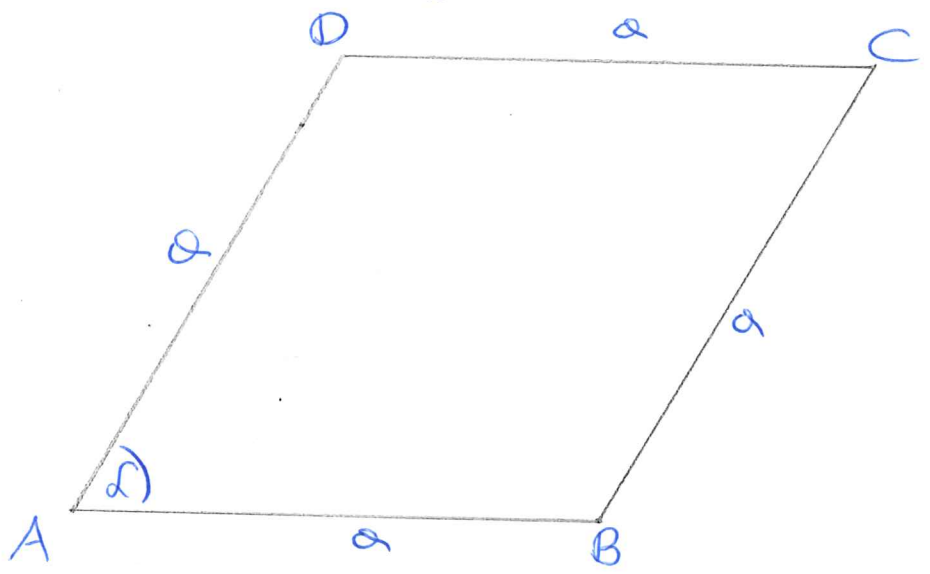
$U = 2 \cdot (350 + 300) = \underline{1300 \text{ m}}$

13a)

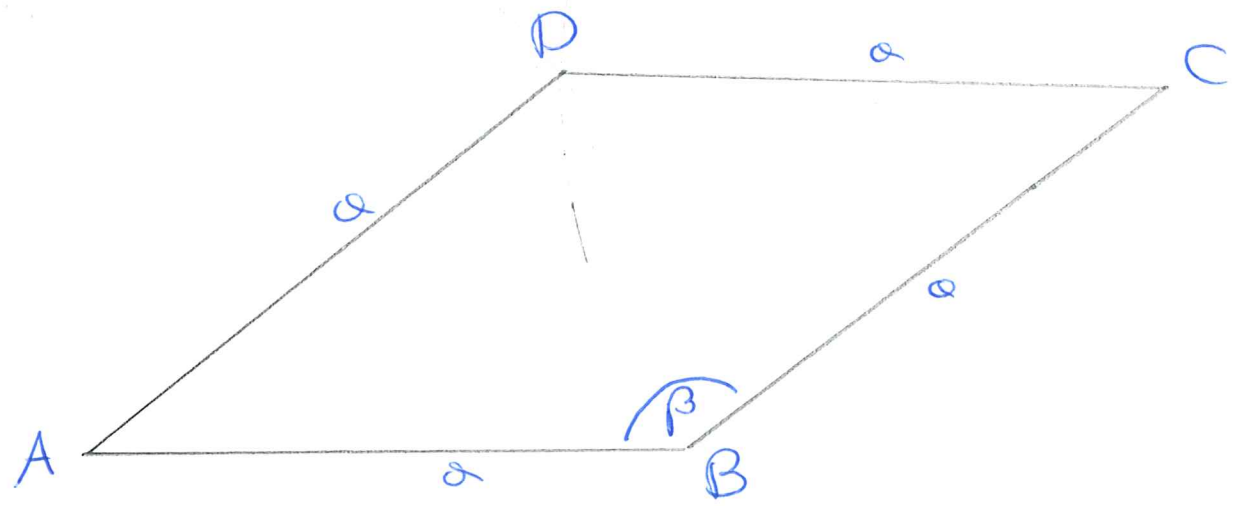


①  $\Delta ABD: SWS$

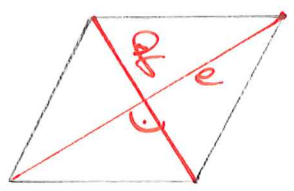
②  $\Delta BCD: SSS$



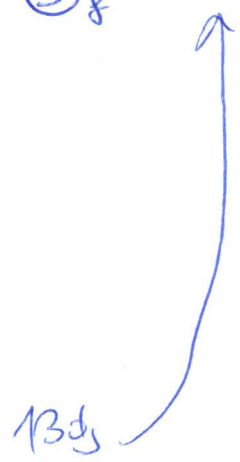
13b)



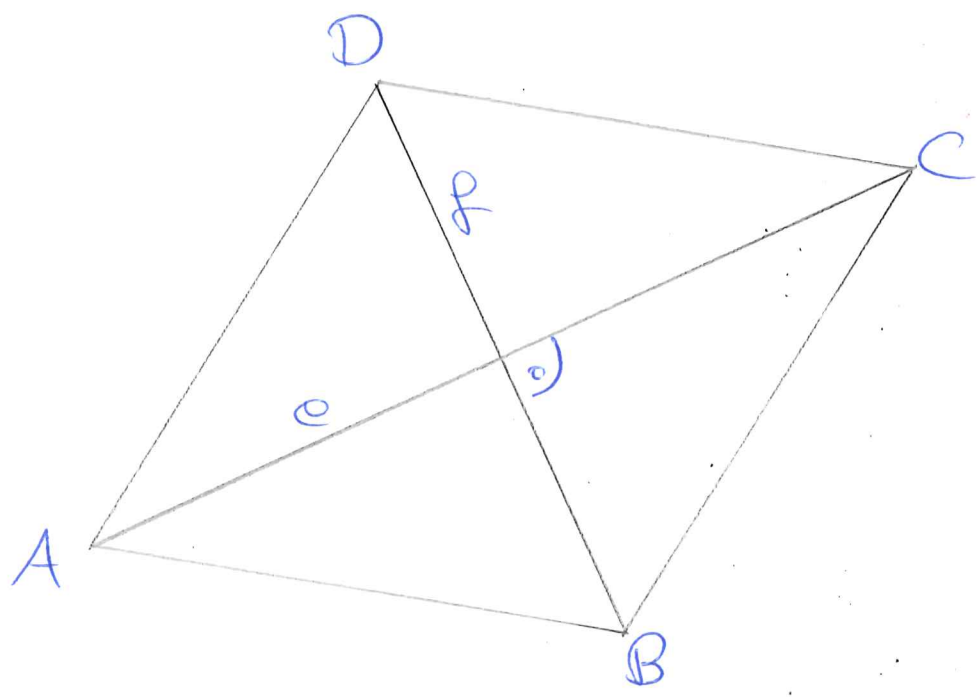
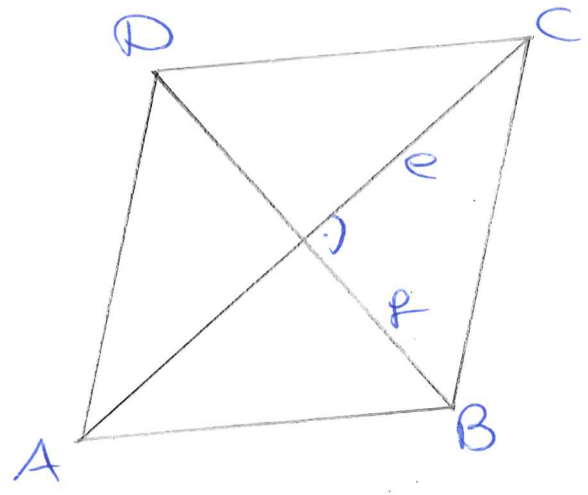
13<sub>g</sub>



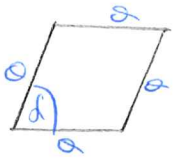
- ① e
- ② Streckensymmetrie
- ③ f



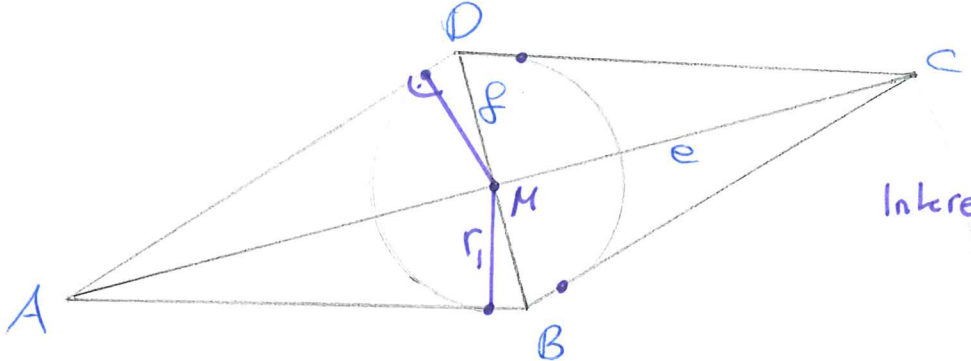
13<sub>d3</sub>



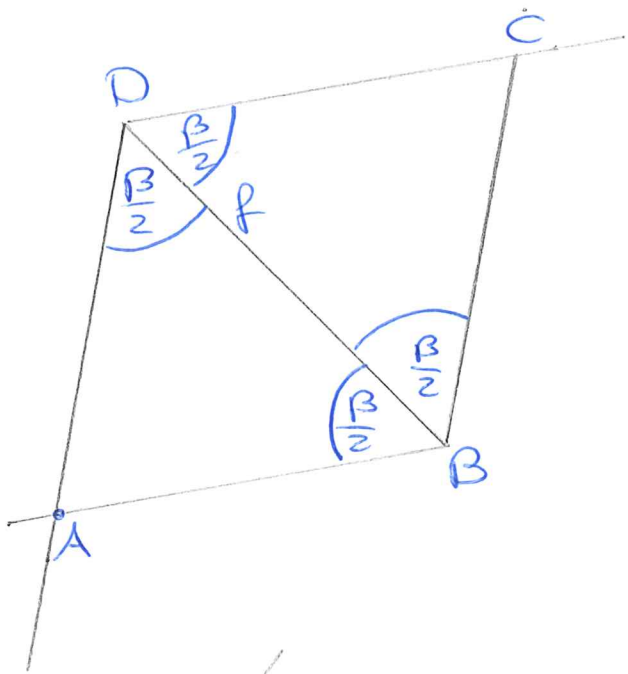
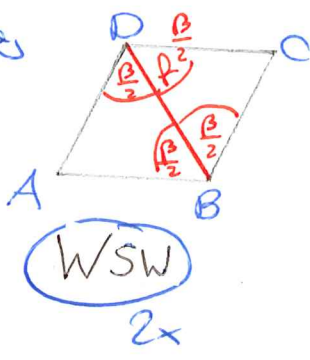
14



13

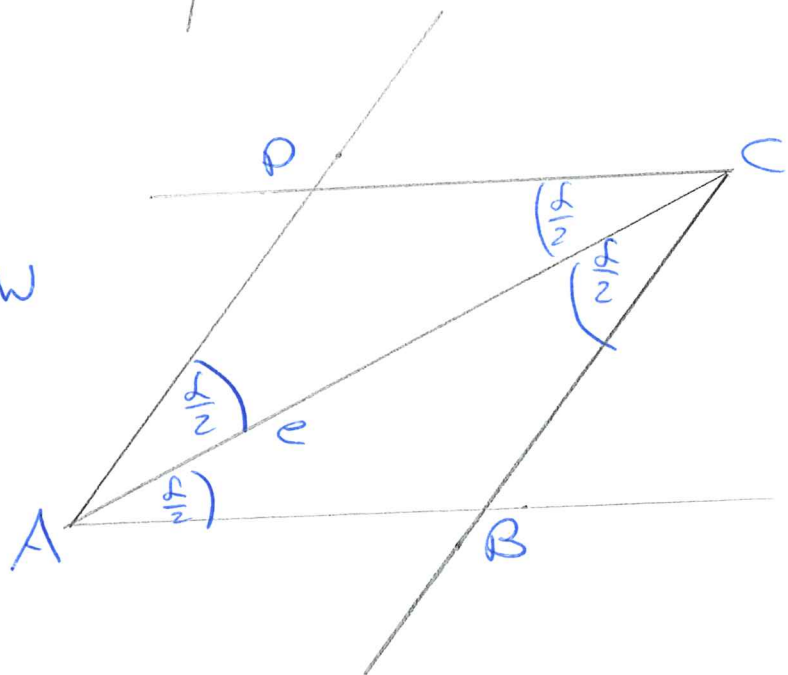


15a

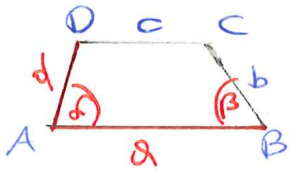


15b

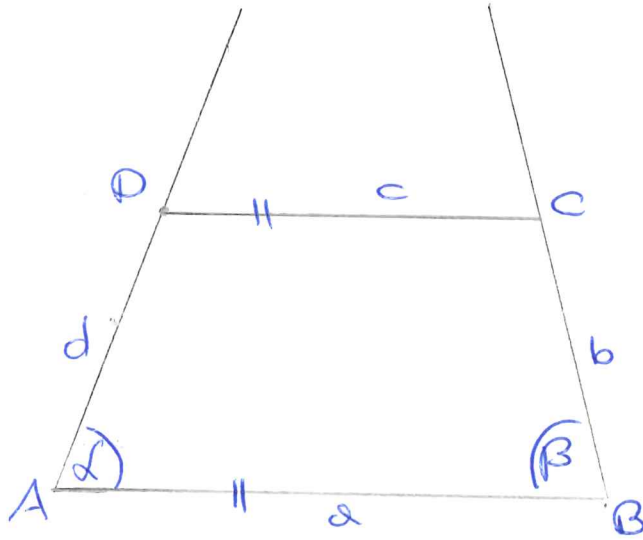
2x: WSW



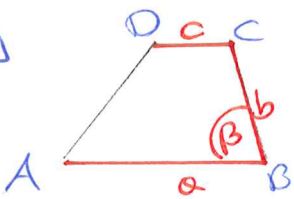
16a



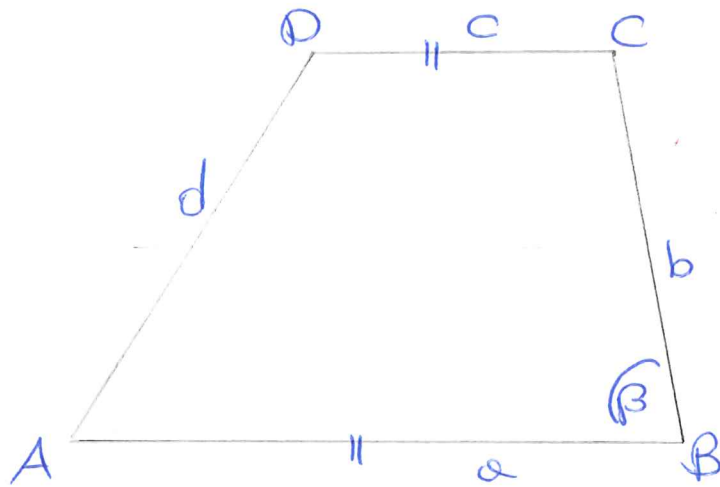
- ①  $\triangle ABD$ : SWS
- ② Winkel  $\beta$
- ③ Seite  $c$  parallel verschieben!



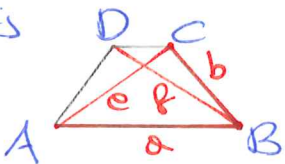
16b



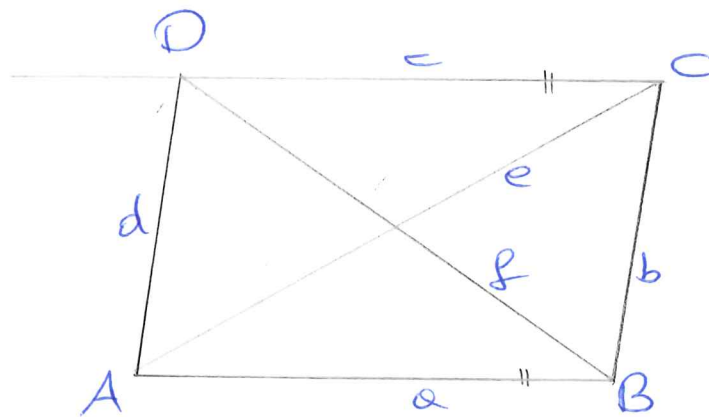
- ①  $\triangle ABC$ : SWS
- ②  $b$
- ③  $c$  (parallel!)



16c

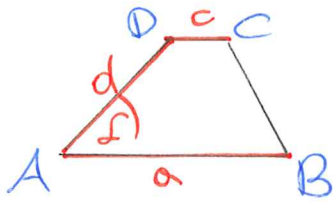


- ①  $\triangle ABC$ : SSS
- ② Seite  $c$  (parallel)
- ③  $f$  abschlagen

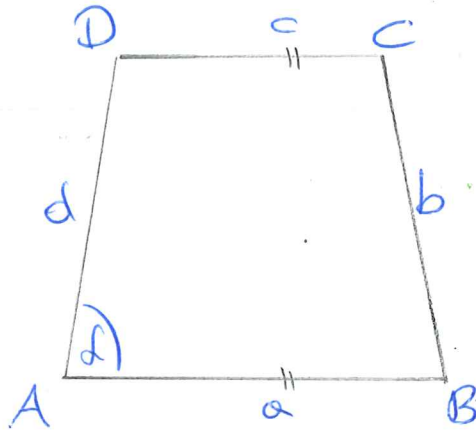


16d<sub>3</sub>

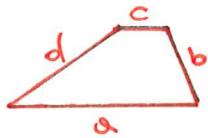
15



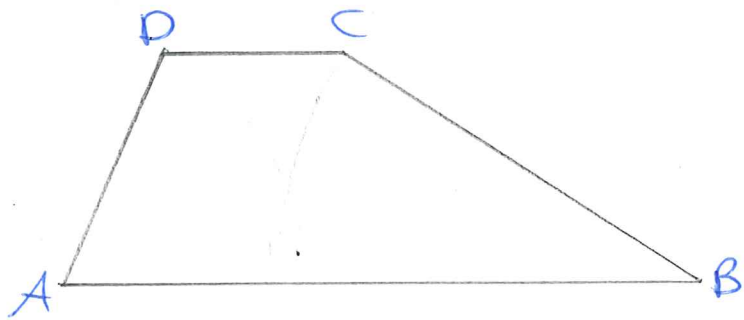
- ①  $\triangle ABD: SWS$
- ② Seite  $c \parallel a$



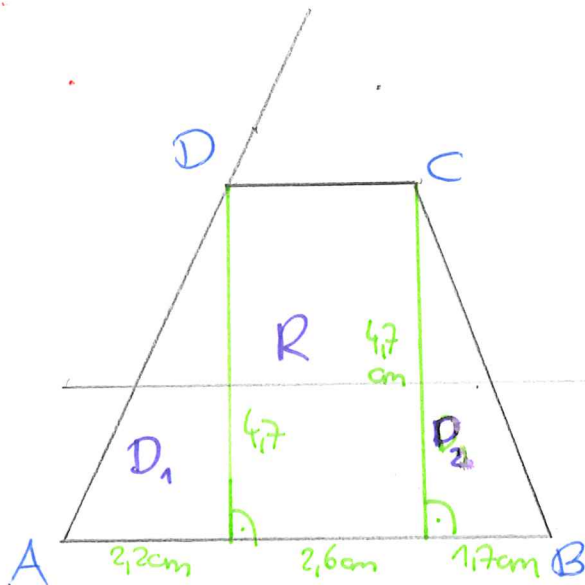
16e<sub>3</sub>



- ① Seite a
- ② Kreisbogen b, d
- ③ c parallel verschieben  
bis zu einer Länge von 24mm



17a<sub>3</sub>



$$D_1 = \frac{4,7 \cdot 2,2}{2} = 5,17 \text{ cm}^2$$

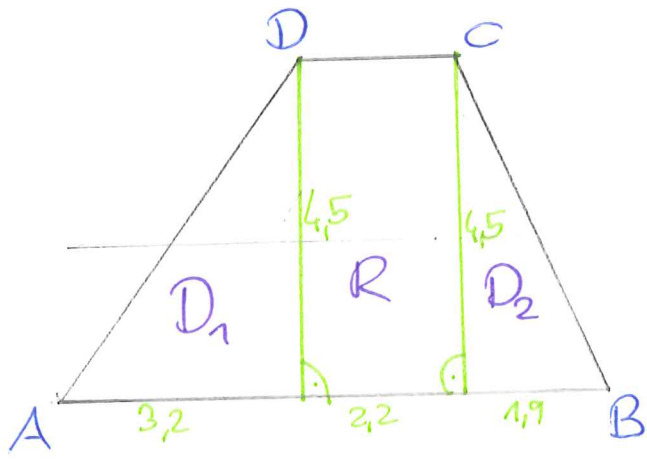
$$D_2 = \frac{4,7 \cdot 1,7}{2} = 3,995 \text{ cm}^2 \approx 4,0 \text{ cm}^2$$

$$R = 2,6 \cdot 4,7 = 12,22 \text{ cm}^2$$

$$\underline{A = 21,39 \text{ cm}^2}$$

17b<sub>3</sub>

16



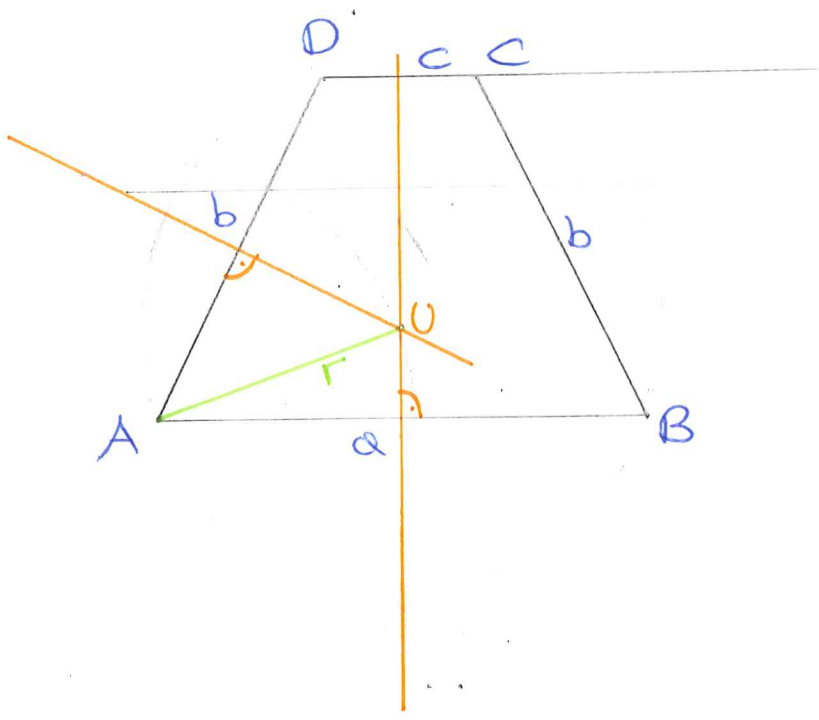
$$D_1 = \frac{3.2 \cdot 4.5}{2} = 7.2 \text{ cm}^2$$

$$D_2 = \frac{1.9 \cdot 4.5}{2} = 4.275 \approx 4.3 \text{ cm}^2$$

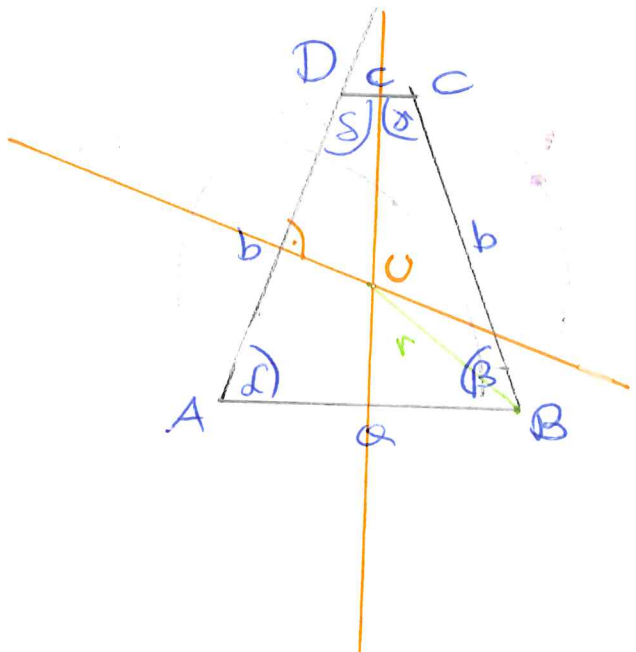
$$R = 4.5 \cdot 2.2 = 9.9 \text{ cm}^2$$

$$\underline{\underline{A = 21.4 \text{ cm}^2}}$$

18a<sub>3</sub>

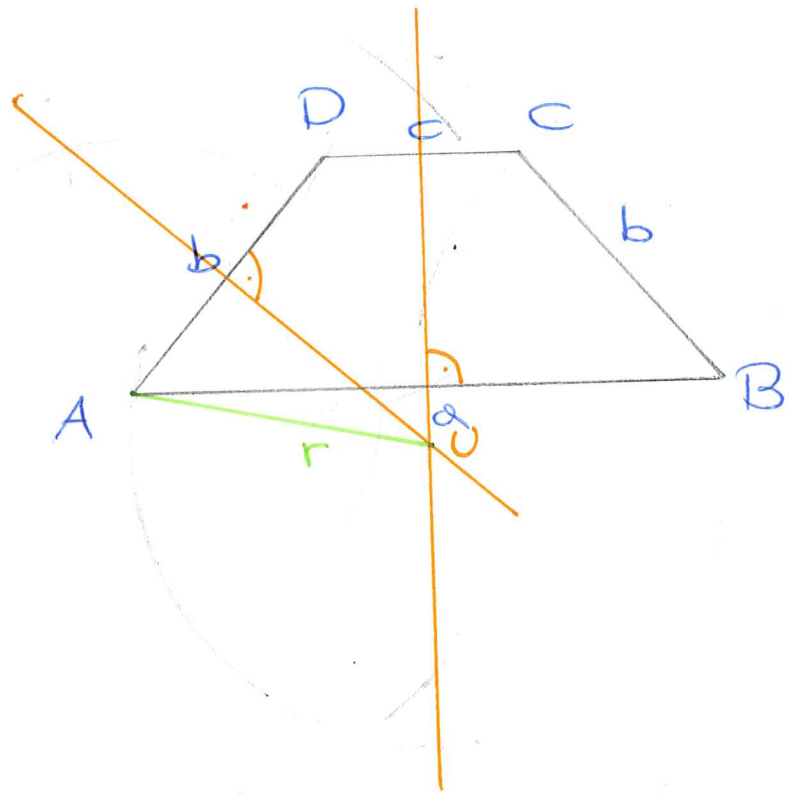


18b<sub>3</sub>

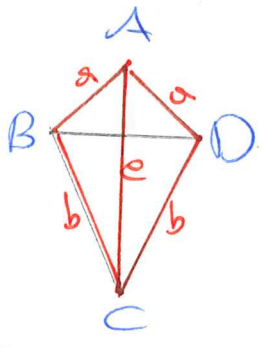




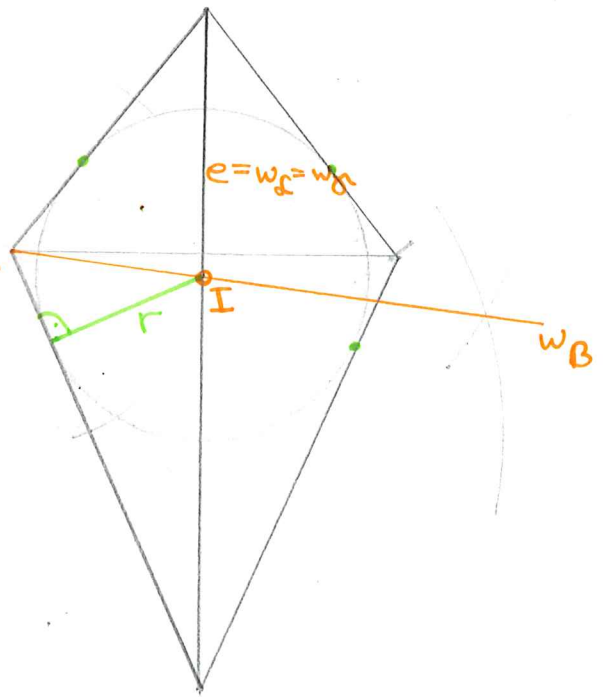
18c



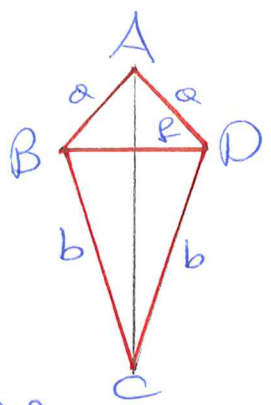
19a



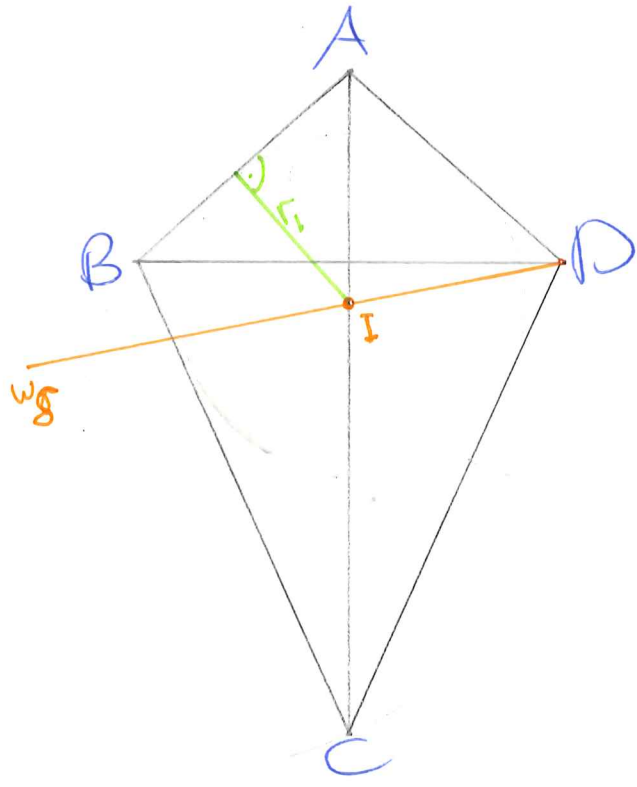
- ①  $e$
- ②  $2 \times SSS!$



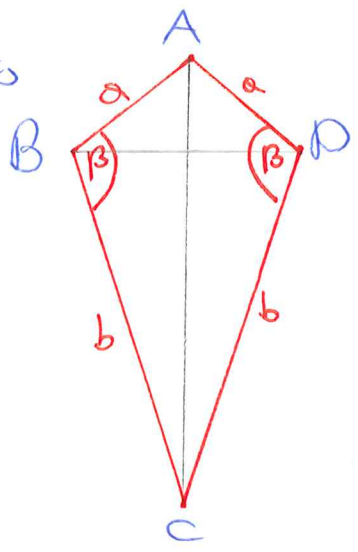
19b



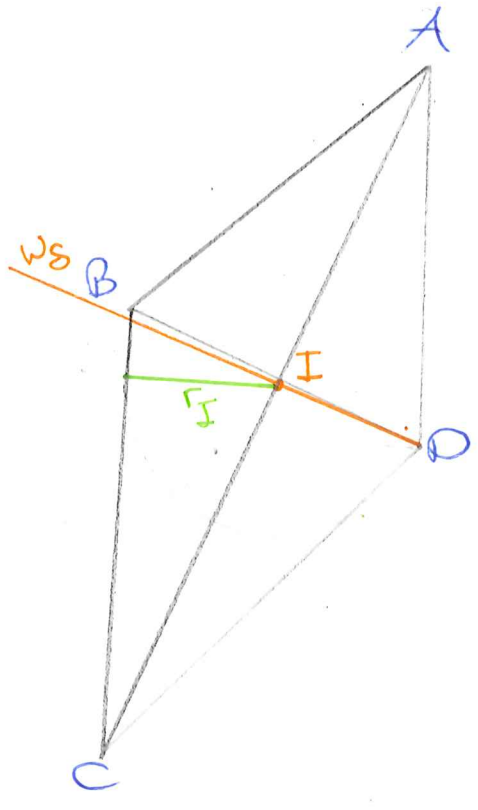
- ①  $\alpha$
- ②  $2 \times \text{SSS}$



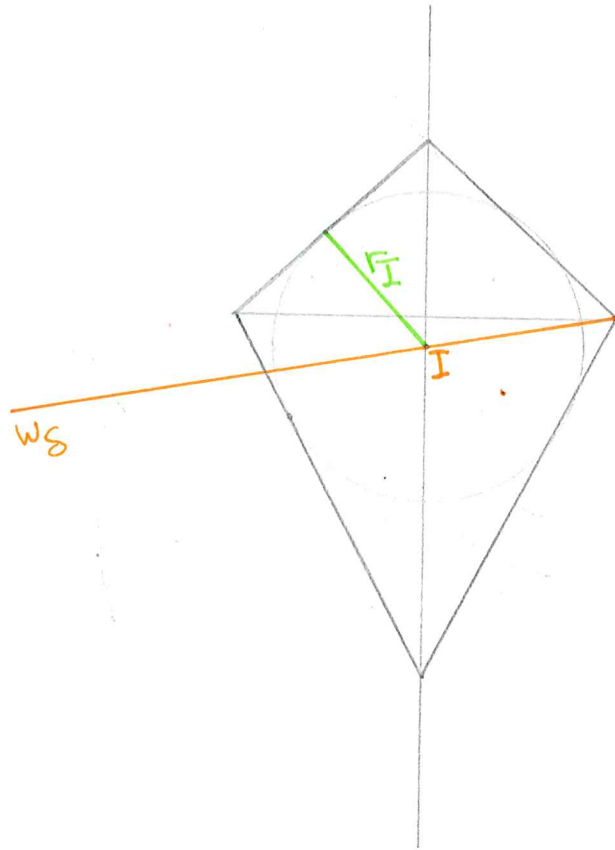
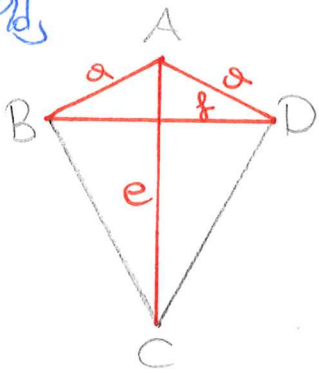
19c



- ①  $\Delta ABC : SWS$
- ②  $\Delta ACD : SSS$

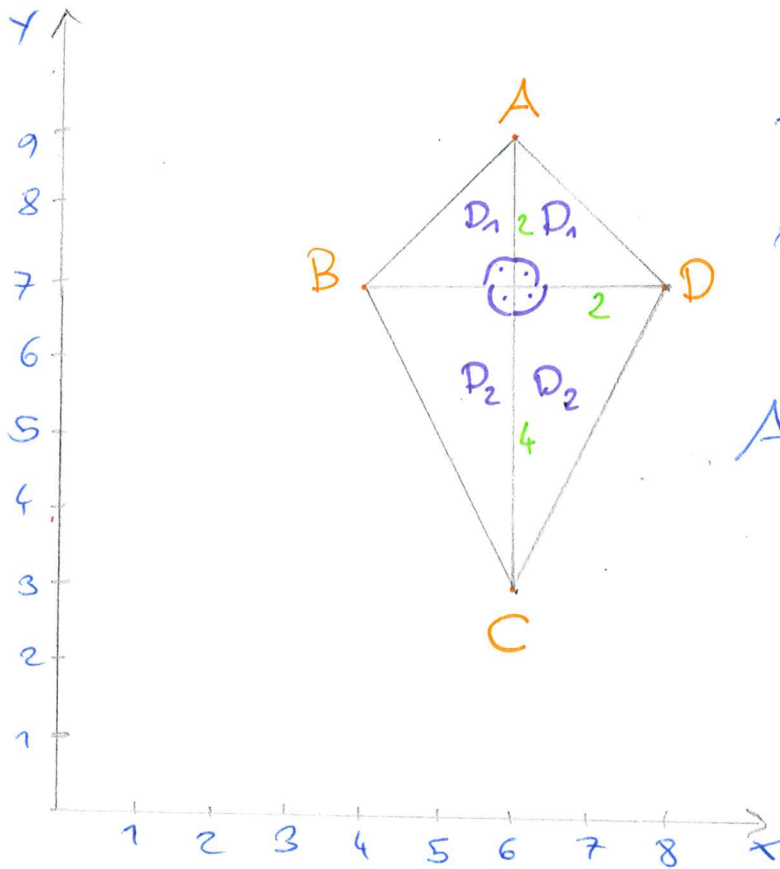


12d



- ① f
- ② Streckensymmetrie auf f
- ③  $\alpha, \alpha$  abschlagen
- ④ e messen

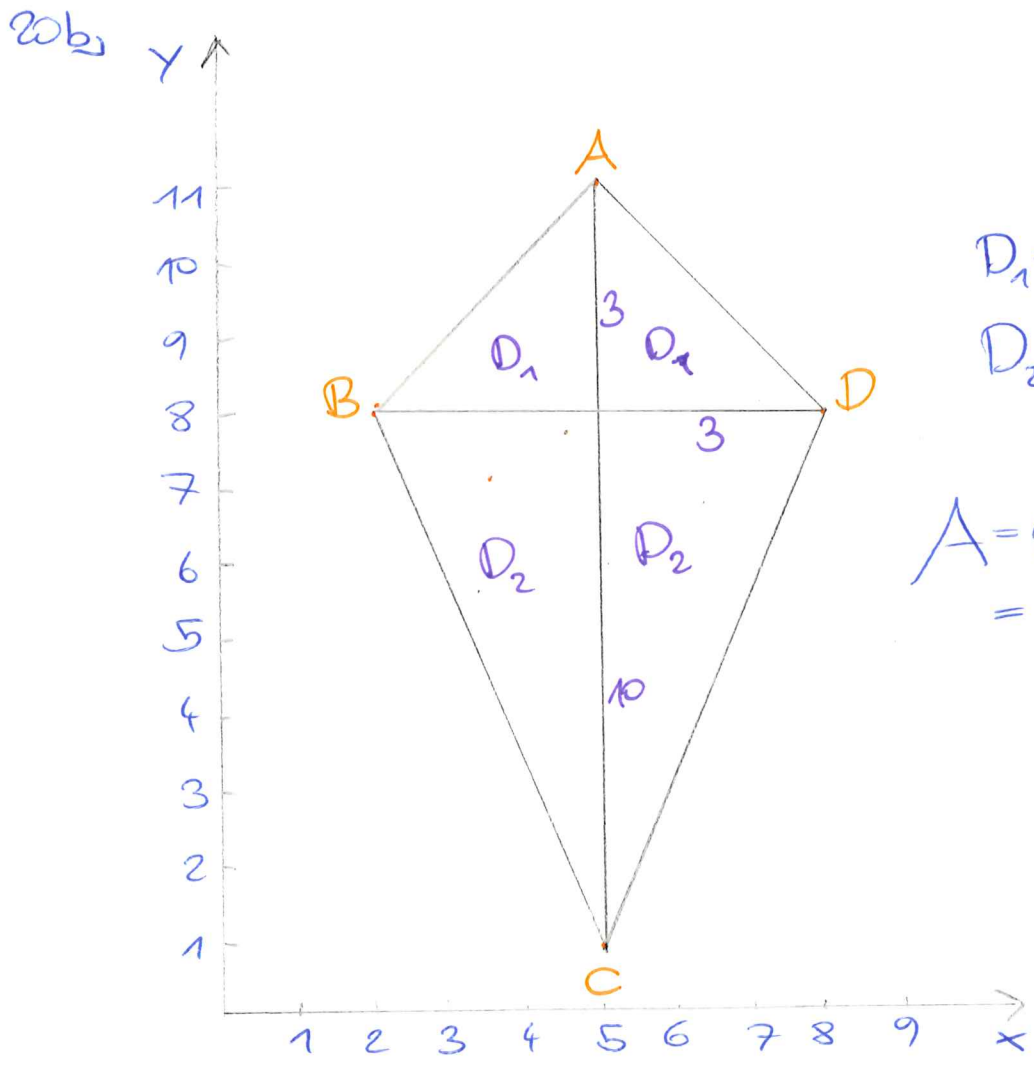
22,02



$$D_1 = \frac{2 \cdot 2}{2} = \underline{2 \text{ cm}^2}$$

$$D_2 = \frac{2 \cdot 4}{2} = \underline{4 \text{ cm}^2}$$

$$A = 2 \cdot D_1 + 2 \cdot D_2 = 4 + 8 = \underline{\underline{12 \text{ cm}^2}}$$

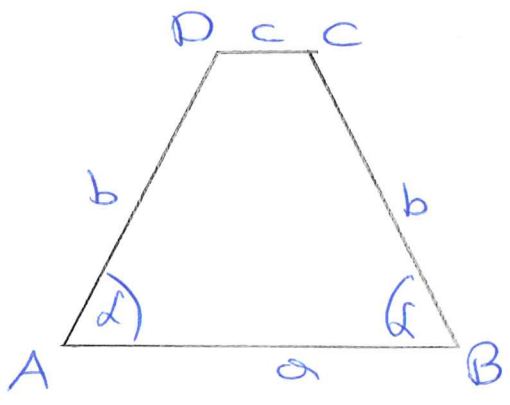


$$D_1 = \frac{3 \cdot 3}{2} = 4,5 \text{ cm}^2$$

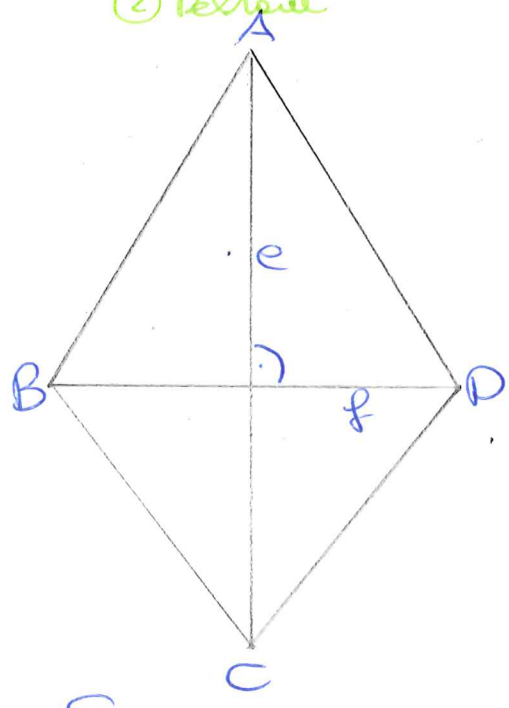
$$D_2 = \frac{3 \cdot 10}{2} = 15 \text{ cm}^2$$

$$A = 2 \cdot D_1 + 2 \cdot D_2 = 9 + 30 = \underline{\underline{39 \text{ cm}^2}}$$

21 ① gleichschenkliges Trapez



② Parallelogramm



③ Parallelogramm

