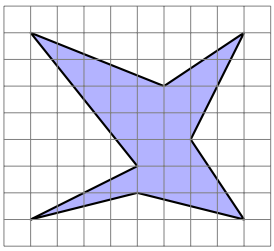
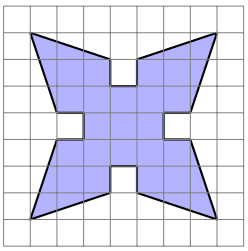
Flächenberechnungen **Lösungen+** **Übungsblatt 6**

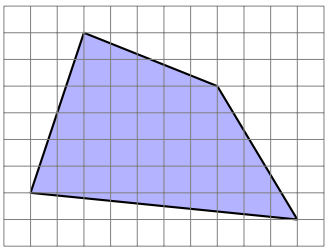
1.



$56-4-7-8-14 = \mathbf{23\,H}$

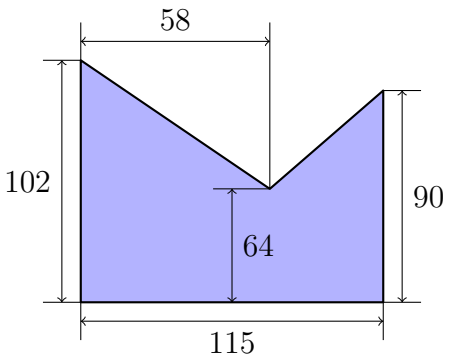


$49 - 4 \cdot 5 = \mathbf{29\,H}$



$70-5-7.5-11-6 = \mathbf{40.5\,H}$

2.

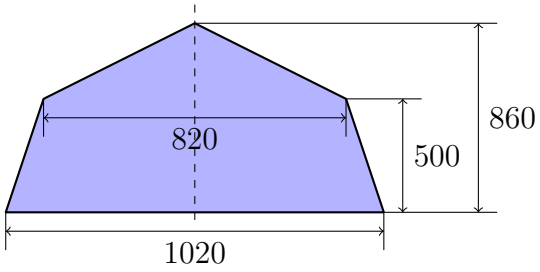


$$A_1 = m_1 \cdot h_1$$
$$= 83\,\text{mm} \cdot 58\,\text{mm} = 4814\,\text{mm}^2$$

$$A_2 = m_2 \cdot h_2$$
$$= 77\,\text{mm} \cdot 57\,\text{mm} = 4389\,\text{mm}^2$$

$$A = A_1 + A_2 = 9302\,\text{mm}^2 = \mathbf{92.03\,cm^2}$$

3.

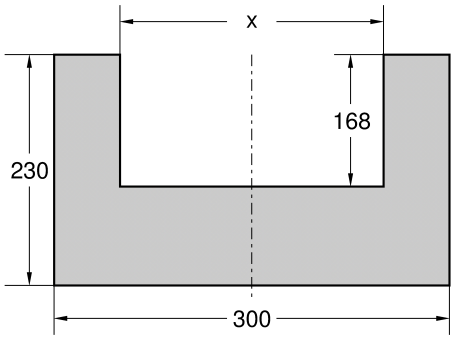


$$A_1 = 82\,\text{cm} \cdot 36\,\text{cm} : 2 = 1476\,\text{cm}^2$$

$$A_2 = m_2 \cdot h_2$$
$$= 92\,\text{cm} \cdot 50\,\text{cm} = 4600\,\text{cm}^2$$

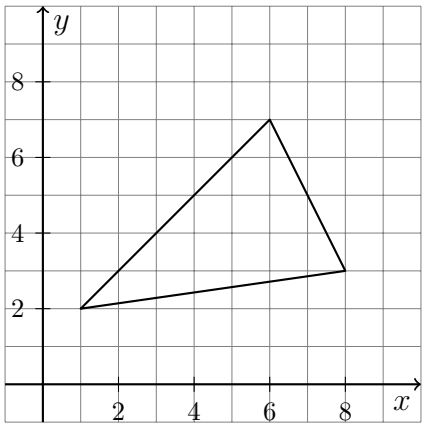
$$A = A_1 + A_2 = \mathbf{6076\,cm^2}$$

4.



$$16.8\,\text{cm} \cdot x + 480\,\text{cm}^2 = 30\,\text{cm} \cdot 23\,\text{cm}$$
$$16.8\,\text{cm} \cdot x + 480\,\text{cm}^2 = 690\,\text{cm}^2$$
$$16.8\,\text{cm} \cdot x = 210\,\text{cm}^2$$
$$x = 210\,\text{cm}^2 : 16.8\ \text{cm}$$
$$x = \mathbf{12.5\,cm}$$

5.



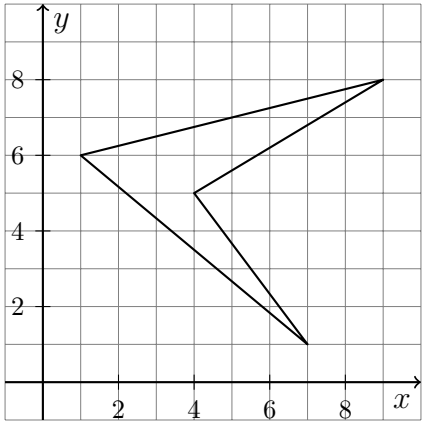
$$2A_{1,2} = \begin{vmatrix} 1 & 2 \\ 8 & 3 \end{vmatrix} = 1 \cdot 3 - 2 \cdot 8 = -13$$

$$2A_{2,3} = \begin{vmatrix} 8 & 3 \\ 6 & 7 \end{vmatrix} = 8 \cdot 7 - 3 \cdot 6 = 38$$

$$2A_{3,1} = \begin{vmatrix} 6 & 7 \\ 1 & 2 \end{vmatrix} = 6 \cdot 2 - 7 \cdot 1 = 5$$

$$2A = 30 \quad \Rightarrow \quad A = 15$$

6.



$$2A_{1,2} = \begin{vmatrix} 1 & 6 \\ 7 & 1 \end{vmatrix} = 1 \cdot 1 - 6 \cdot 7 = -41$$

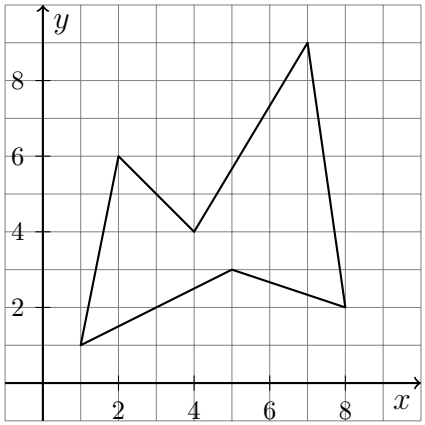
$$2A_{2,3} = \begin{vmatrix} 7 & 1 \\ 4 & 5 \end{vmatrix} = 7 \cdot 5 - 1 \cdot 4 = 31$$

$$2A_{3,4} = \begin{vmatrix} 4 & 5 \\ 9 & 8 \end{vmatrix} = 4 \cdot 8 - 5 \cdot 9 = -13$$

$$2A_{4,1} = \begin{vmatrix} 9 & 8 \\ 1 & 6 \end{vmatrix} = 9 \cdot 6 - 8 \cdot 1 = 46$$

$$2A = 23 \quad \Rightarrow \quad A = 11.5$$

7.



$$2A_{1,2} = \begin{vmatrix} 1 & 1 \\ 5 & 3 \end{vmatrix} = 1 \cdot 3 - 1 \cdot 5 = -2$$

$$2A_{2,3} = \begin{vmatrix} 5 & 3 \\ 8 & 2 \end{vmatrix} = 5 \cdot 2 - 3 \cdot 8 = -14$$

$$2A_{3,4} = \begin{vmatrix} 8 & 2 \\ 7 & 9 \end{vmatrix} = 8 \cdot 9 - 2 \cdot 7 = 58$$

$$2A_{4,5} = \begin{vmatrix} 7 & 9 \\ 4 & 4 \end{vmatrix} = 7 \cdot 4 - 9 \cdot 4 = -8$$

$$2A_{5,6} = \begin{vmatrix} 4 & 4 \\ 2 & 6 \end{vmatrix} = 4 \cdot 6 - 4 \cdot 2 = 16$$

$$2A_{6,1} = \begin{vmatrix} 2 & 6 \\ 1 & 1 \end{vmatrix} = 2 \cdot 1 - 6 \cdot 1 = -4$$

$$2A = 46 \quad \Rightarrow \quad A = 23$$