Englische Übungen zu Flächeninhalt ebener Vielecke

1. Plot the points A(– 8 |4), B(7|–7) and C(– 2|5) in a coordinate system and connect them. What is the size of the angle
   a. ∢ABC,
   b. ∢BCA,
   c. ∢CAB?

2. A parallelogram ABCD is given by A = 44 cm², b = 5.8 cm and h_a = 5.5 cm. Calculate the length of side a and construct the parallelogram.

3. A triangle ABC is given by the coordinates of its vertices A(–6|–5), B(10|–3), C(4|9).

a. Find the coordinates of the circumcentre!
b. Find the coordinates of the incentre!
c. Find the coordinates of the centroid!
d. Find the coordinates of the orthocentre!
e. Calculate its area.

4. Calculate the area of the triangle ABC with side b = 6.1 cm and height h_b = 7.3 cm.

5. A triangle ABC has area A = 166.6 cm^2 and height h_c = 8.5 cm.
Calculate the length of side c.

6. Draw the given figure and calculate its area!

a. Kite with length a = 5.1 cm and diagonals e = 8.6 cm and f = 7.0 cm
b. Rhombus with the diagonals e = 10.3 cm and f = 7.6 cm
c. Square with the diagonal d = 6.8 cm

7. Calculate the area of the trapezoid (trapezium) ABCD with the parallel sides a = 4.8 cm and c = 2.6 cm and the height h = 2.3 cm.

8. This polygon is given by the coordinates of its vertices.
Draw the polygon and calculate its area!

a. A(– 5|–1), B(3|–2), C(3|1), D(–1|4)

b. A(–3|–4), B(2|–6), C(7|–4), D(7|5), E(0|5)

Vocabulary

Englisch	Deutsch
to plot	zeichnen
coordinate system	Koordinatensystem
to connect	verbinden
size	Größe
coordinate	Koordinate
vertex (vertices)	Eckpunkt(e)
circumcentre	Umkreismittelpunkt
incentre	Inkreismittelpunkt
centroid	Schwerpunkt
orthocentre	Höhenschnittpunkt
to construct	konstruieren
side	Seite
parallelogram	Parallelogramm
triangle	Dreieck
height	Höhe
to draw	zeichnen
kite	Deltoid, Drache
rhombus	Rhombus
square	Quadrat
trapezoid (trapezium)	Trapez
polygon	Vieleck

Solutions

1.

a. ∢ABC = 17°
b. ∢BCA = 117°
c. ∢CAB = 46°

2. a = 8 cm

3.

a. U (1.5|0.2)
b. I (3.3|0.6)
c. S (2.7|0.3)
d. H (5.1|0.4)
e. A = 102 E^2

4. The area is $\approx 22\ cm^2$.

5. c = 39.2 cm

6.

a. A = 30.1 cm²
b. A $\approx 39\ cm^2$
c. A $\approx 23\ cm^2$

7. A $\approx 8.5\ cm^2$

8.

a. A = 28 cm²
b. A = 86.5 cm²