Mixed problems

Area and perimeter of composite 2D-shapes



1. Calculate the perimeter and area of the 2D-shapes below.



2. The 2D-shape alongside consists of a trapezium, kite and rhombus. If AB = BC, BE = 17 cm, PF = 6 cm and PG = 8 cm, calculate the perimeter and area of the 2D-shape.



С

14 cm



Mixed problems

Geometry of 2D-shapes and straight lines

- **1.** ABCD is a quadrilateral with AB || DC, AD \perp AB and DB \perp BC. If AB = 12 cm and AD = 9 cm, answer the following questions.
 - **a)** Calculate the length of BD.



- **b)** Explain why ABCD is a trapezium.
- **c)** Prove that $\triangle ABD \parallel \mid \triangle BDC$.
- **d)** Calculate the length of BC and CD.

- e) Calculate the perimeter of ABCD.
- **f)** Calculate the area of ABCD.
- **2.** In the composite shape $PT \perp SR$, $QU \perp SR$, PT = TU = UQ, TS = UR, PQ = 24 cm and PS = 26 cm.
 - **a)** Explain why PQUT is a square.
 - **b)** Calculate the length of ST.

24 cm

- **c)** Prove that $\triangle PTS \equiv \triangle QUR$.
- **d)** Calculate the shape's perimeter and area.

