

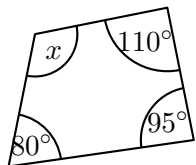
Foundation GCSE: Quadrilaterals

Name: _____

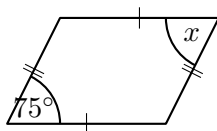
Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (10). Working out should be shown where appropriate.

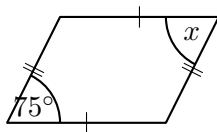
1. Find the missing interior angle x in the quadrilateral:



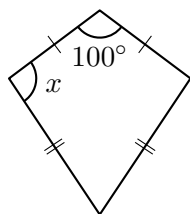
2. In the parallelogram, find the adjacent interior angle x :



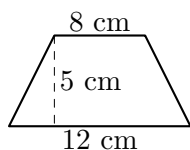
3. In the rhombus, find the opposite angle x :



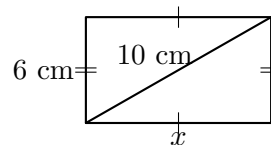
4. Find angle x in the kite:



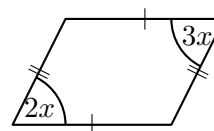
5. Find the area of the trapezium with parallel sides 8 cm and 12 cm, and perpendicular height 5 cm:



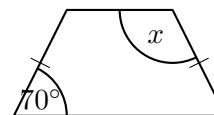
6. Find the length x of the rectangle given its diagonal 10 cm and width 6 cm:



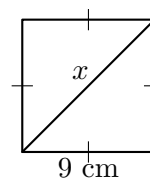
7. In the parallelogram, find x given adjacent interior angles $2x$ and $3x$:



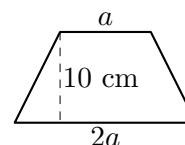
8. In the isosceles trapezium, find the top interior angle x :



9. Find the diagonal x of a square with perimeter 36 cm (side length 9 cm):



10. Find a in the trapezium with parallel sides a and $2a$, height 10 cm, and area 75 cm^2 :



Answers & Worked Solutions

1. 75° : $360^\circ - (80^\circ + 95^\circ + 110^\circ) = 75^\circ$
2. 105° : Adjacent angles in a parallelogram sum to 180° ($180^\circ - 75^\circ = 105^\circ$).
3. 68° : Opposite angles in a rhombus are equal.
4. 100° : Kites have one pair of opposite equal angles.
5. 50 cm^2 : Area = $\frac{1}{2}(8 + 12) \times 5 = 50 \text{ cm}^2$.
6. 8 cm : Using Pythagoras' theorem:
7. 36 : $2x + 3x = 180^\circ \implies 5x = 180^\circ \implies x = 36$.
8. 110° : Consecutive interior angles between parallel lines are supplementary ($180^\circ - 70^\circ = 110^\circ$).
9. 12.7 cm : Diagonal = $\sqrt{9^2 + 9^2} = \sqrt{162} \approx 12.7 \text{ cm}$.
10. 5 cm : Area = $\frac{1}{2}(a + 2a) \times 10 = 75 \implies 15a = 75 \implies a = 5 \text{ cm}$.