GCSE Maths – Geometry and Measures

Properties of Triangles and Quadrilaterals

Worksheet

NOTES

SOLUTIONS

This worksheet will show you how to work out different types of [topic] questions. Each section contains a worked example, a question with hints and then questions for you to work through on your own.

Section A

Worked Example

Calculate angle x

Step 1: Use properties of quadrilaterals to calculate the other angles.

Opposite angles are equal so in the quadrilateral there are two angles equal to x and two angles measuring $111°$.

Step 2: Set up an equation using the fact that angles in a quadrilateral add up to $360°$.

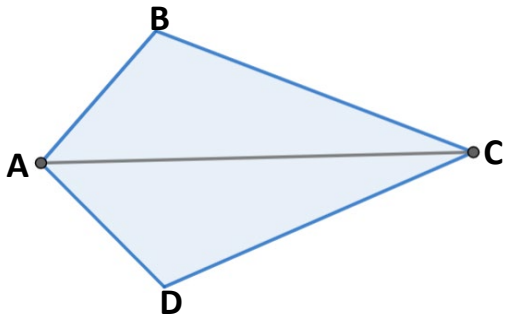
$$x + x + 111° + 111° = 360°$$
$$2x + 222° = 360°$$

Step 3: Solve the equation.

$$2x + 222° = 360°$$
$$2x = 138°$$
$$x = 69°$$

Guided Example

In the kite, angle DAB is $118°$ and angle CDA is $95°$. Calculate angle ACD.



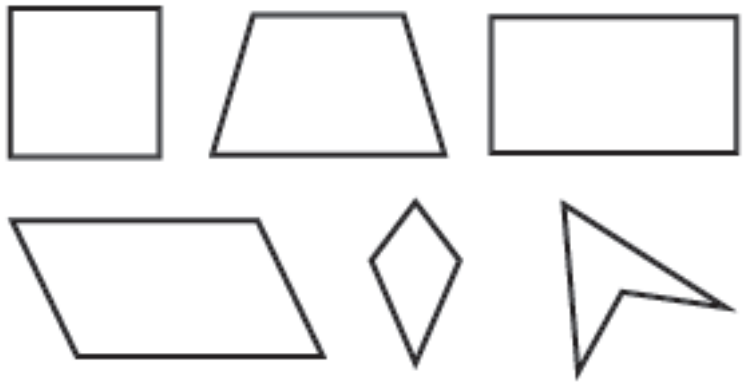
Step 1: Use properties of quadrilaterals and triangles to calculate the other angles.

Step 2: Set up an equation using the fact that angles in a quadrilateral add up to 360°.

Step 3: Solve the equation.

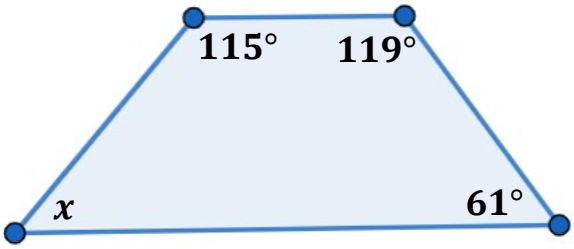
Now it's your turn!
If you get stuck, look back at the worked and guided examples.

1. Shade the trapezium



2. Give 2 properties of a Rhombus.

3. Calculate angle x.

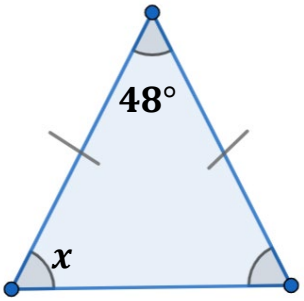


4. Calculate angle y .

Section B

Worked Example

Calculate angle x.



Step 1: Identify the unlabelled angle.

Base angles in an isosceles triangle are equal. Therefore, the unlabelled angle is also equal to x.

Step 2: Use the fact that angles in a triangle add up to $180°$ to set up an equation.

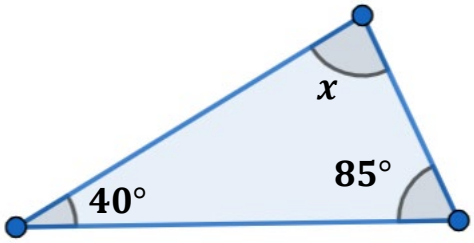
$$x + x + 48° = 180°$$

Step 3: Solve the equation.

$$2x + 48° = 180°$$
$$2x = 132°$$
$$\boldsymbol{x = 66°}$$

Guided Example

Calculate angle x.

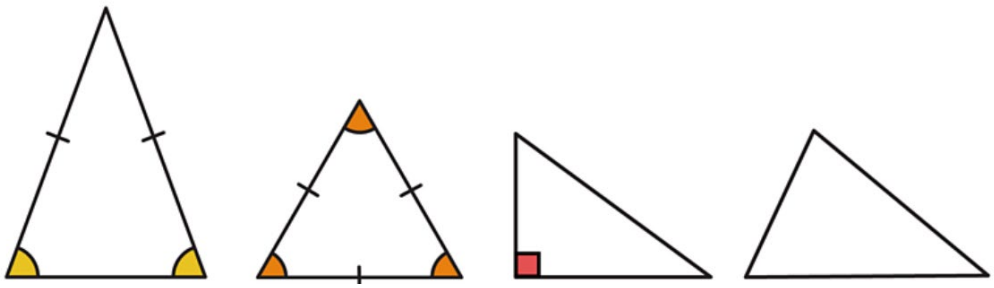


Step 1: Use the fact that angles in a triangle add up to $180°$ to set up an equation.

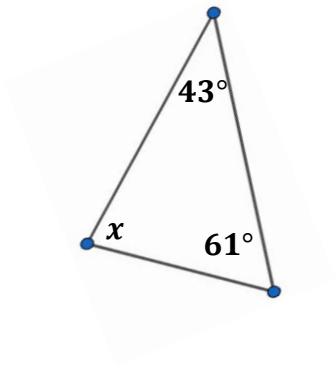
Step 2: Solve the equation.

Now it's your turn!
If you get stuck, look back at the worked and guided examples.

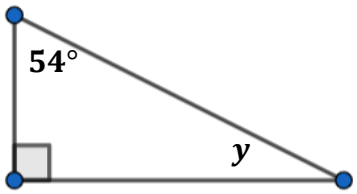
5. Circle the isosceles triangle and give a reason for your identification



6. Calculate angle x.



7. Calculate angle y in the right-angled triangle.



8. The triangle below is an isosceles triangle. Calculate angle z.