Properties of quadrilaterals

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A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Explain quadrilateral properties through angles and congruent triangles.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

A parallelogram has two pairs of parallel opposite sides. A diagonal splits it into congruent triangles, giving equal opposite sides and angles.

Rectangles add right angles; rhombuses add four equal sides; squares satisfy both. Diagonal properties differ, so test the exact claim rather than relying on appearance.

Worked example

One angle of a parallelogram is 68°. Find the other three.

Opposite angles match.

Adjacent angles sum to 180°.

Answer: 112°,68°,112°

Try it yourself

Name: _____ Date: _____

1. A parallelogram has adjacent sides 7 and 10 cm. Find perimeter.

2. Find adjacent angle to 125° in a parallelogram.

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. 34 cm

Opposite sides are equal.

2. 55°

Co-interior angles sum to 180°.

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