Squares and inclusive quadrilateral classification

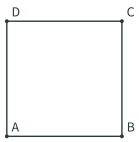
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Worked example

1

ABCD is a rectangle with AB=BC. Prove it is a square.



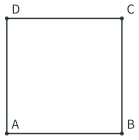
Geometry diagram; not drawn to scale except for construction tasks.

Guided attempt

2

ABCD is a rhombus with one right angle. Explain why it is a square.

1. Rhombus ⇒ four ____ sides and two pairs of ____ opposite sides.
2. One angle is 90°; its adjacent angle is $180^\circ - \square = \square$.
3. Four equal sides + four right angles ⇒ ____.

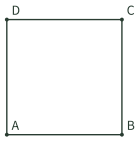


Geometry diagram; not drawn to scale except for construction tasks.

Prerequisite

3

Does a square count as a rectangle under the inclusive definition? Explain.

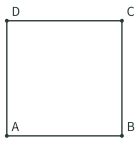


Geometry diagram; not drawn to scale except for construction tasks.

Prerequisite

4

Does a square count as a rhombus? Explain.



Geometry diagram; not drawn to scale except for construction tasks.

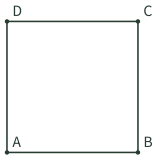
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Independent practice 5

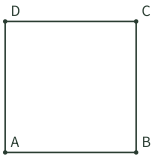
A rectangle has perpendicular diagonals. State and justify its strongest classification.



Geometry diagram; not drawn to scale except for construction tasks.

Independent practice 6

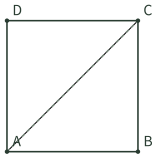
A rhombus has equal diagonals. State and justify its strongest classification.



Geometry diagram; not drawn to scale except for construction tasks.

Independent practice 7

A square has side 4 cm. Find its diagonal exactly and name the right triangle used.



Geometry diagram; not drawn to scale except for construction tasks.

Independent practice 8

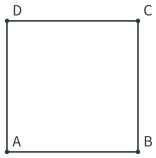
A rectangle has adjacent sides 8 cm and 6 cm. A learner calls it a square because the drawing looks nearly equal. Correct the claim.



Geometry diagram; not drawn to scale except for construction tasks.

Exit question 9

Is every square a parallelogram? Explain.



Geometry diagram; not drawn to scale except for construction tasks.

Exit question 10

Must every rectangle be a square? Give a counterexample.



Geometry diagram; not drawn to scale except for construction tasks.