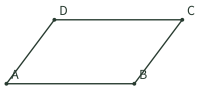
Parallelograms: properties, criteria and midsegments

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Worked example 1

ABCD is a parallelogram and AB=8 cm. Find CD and name the property.

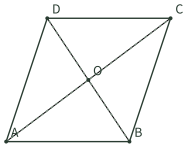


Geometry diagram; not drawn to scale except for construction tasks.

Guided attempt 2

ABCD is a parallelogram. Its diagonals meet at O and AO=5 cm. Find OC.

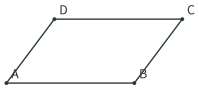
1. The diagonals of a parallelogram ____ each other.
2. $AO = OC$, so $OC = \square$ cm.
3. Check the whole diagonal: $AC = AO + OC = \square$ cm.



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

Prerequisite 3

AB ∥ CD and AD ∥ BC. Which quadrilateral family follows directly from the definition?



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

Prerequisite 4

D is the midpoint of AB and AB=10 cm. Find AD.

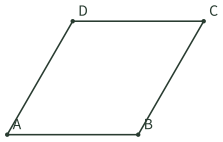
Parallelograms: properties, criteria and midsegments

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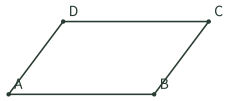
Independent practice 5

ABCD is a parallelogram with ∠A=60°. Find ∠B and explain the angle relation.



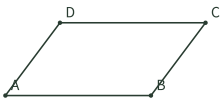
Independent practice 6

Both pairs of opposite sides of ABCD are equal. State the criterion and conclusion.



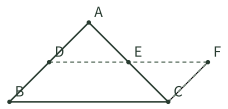
Independent practice 7

AB ∥ CD and AB=CD. Is ABCD a parallelogram? Identify why the same pair matters.



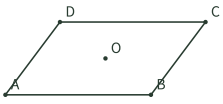
Independent practice 8

D and E are midpoints of AB and AC. Extend DE to F so DE=EF. Prove DE ∥ BC and DE=BC/2 using congruence and a parallelogram criterion.



Exit question 9

The diagonals of ABCD bisect each other at O. What follows?



Exit question 10

Only AD=BC is given. Must ABCD be a parallelogram? Use the shown isosceles trapezium as a counterexample.

