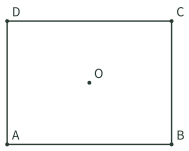
Rectangles and rhombi: diagonal conditions and converses — Further practice

Year 8, lower volume • text pp. 37–44 • textbook lessons 19–22

Further practice 11

A rectangle has AC=10 cm and diagonals meeting at O. Find BO.



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

Further practice 12

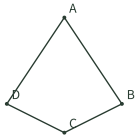
A general quadrilateral has equal diagonals. Must it be a rectangle? Explain with the shown trapezium.



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

Further practice 13

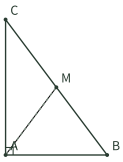
A general quadrilateral has perpendicular diagonals. Must it be a rhombus? Give a reason from the shown kite.



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

Further practice 14

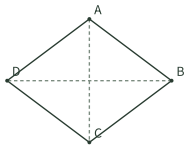
In right △ABC, M is the midpoint of hypotenuse BC and AM=10 cm. Find BC.



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

Extension 15

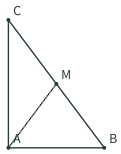
A rhombus has diagonals 6 cm and 8 cm. Derive its area by splitting it into four right triangles.



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

Extension 16

In a nondegenerate triangle ABC, M is the midpoint of BC and AM=BM. Show that $\angle BAC$ is a right angle, using angles in the two isosceles triangles.



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