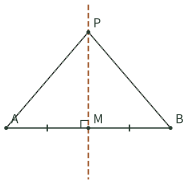
Perpendicular bisectors: properties and the SSS converse — Further practice

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Further practice 11

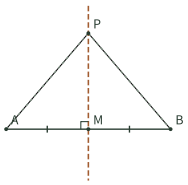
M is the midpoint of AB and AB=7.6 cm. Find AM.



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

Further practice 12

P lies on the perpendicular bisector of AB. If PA=11.5 cm, find PB and state the property.



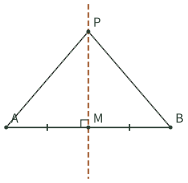
Geometry diagram; not drawn to scale except for construction tasks.

Further practice 13

If A≠B and PA=PB, must P be inside some specified angle before the perpendicular-bisector converse can be used? Contrast this with the angle-bisector converse.

Further practice 14

To prove PA=PB from M being the midpoint and PM⊥AB, a pupil writes “PA=PB, therefore HL gives congruence.” Identify the circular step and give a valid criterion.



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

Extension 15

A,B,C are noncollinear. P lies on the perpendicular bisectors of AB and BC. Prove that P also lies on the perpendicular bisector of AC.

Extension 16

M is the midpoint of AB. If P=M, the usual SAS triangles collapse. Is the equality PA=PB still true? Justify it without congruent triangles.