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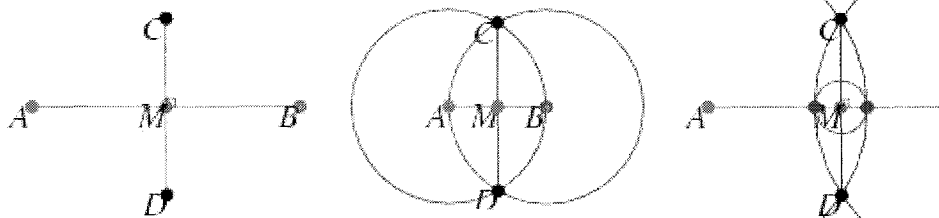
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Perpendicular Bisector



A perpendicular bisector CD of a line segment AB is a line segment perpendicular to AB and passing through the midpoint M of AB (left figure). The perpendicular bisector of a line segment can be constructed using a compass drawing circles centered at A and B with radius AB and connecting their two intersections. This line segment crosses AB at the midpoint M of AB (middle figure). If the midpoint M is known, then the perpendicular bisector can be constructed by drawing a small auxiliary circle around M , then drawing an arc from each endpoint that crosses the line AB at the farthest intersection of the circle with the line (i.e., arcs with radii AA' and BB' respectively). Connecting the intersections of the arcs then gives the perpendicular bisector CD (right figure). Note that if the classical construction requirement that compasses be collapsible is dropped, then the auxiliary circle can be omitted and the rigid compass can be used to immediately draw the two arcs using any radius large that half the length of AB .