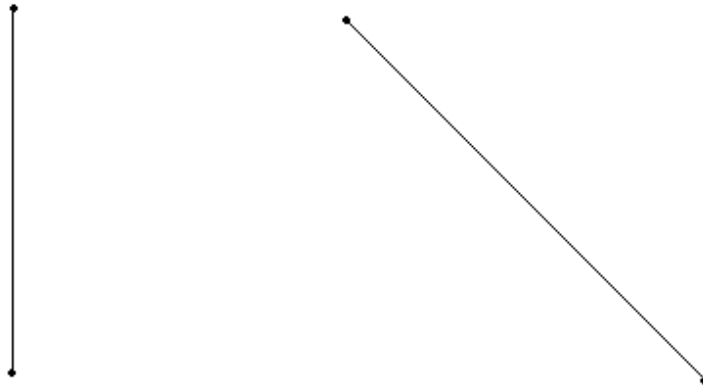


Constructing the perpendicular bisector of a line segment with compass and straightedge

1. Draw the perpendicular bisector of both of the two lines below

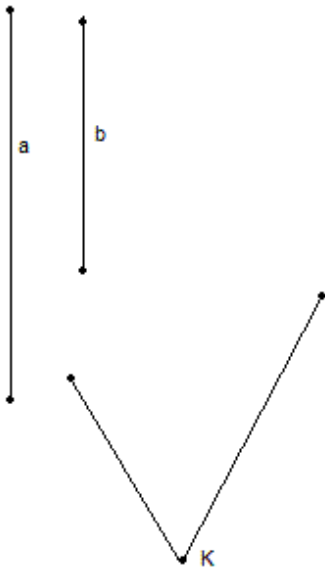


2. Construct the four perpendicular bisectors of the sides of the rectangle below, using the fewest arcs and lines. (The record: 3 arcs, 2 lines)

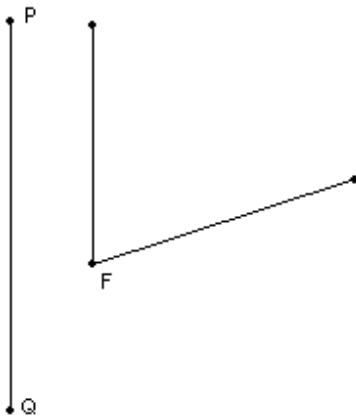


Construct a triangle given two sides and the included angle with compass and straightedge

1. Construct a triangle has two sides congruent to the given line segments a and b and where the included angle is equal in measure to the angle K.

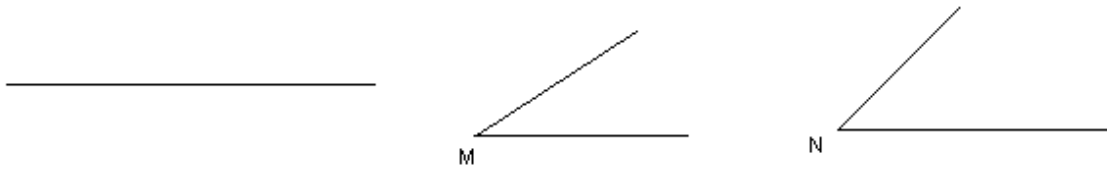


2. (a) Construct a triangle which has two sides both equal to the given line segment PQ, and where the angle between them has the same measure as the angle F.
 (b) What is the exact name of the type of triangle drawn in this construction?

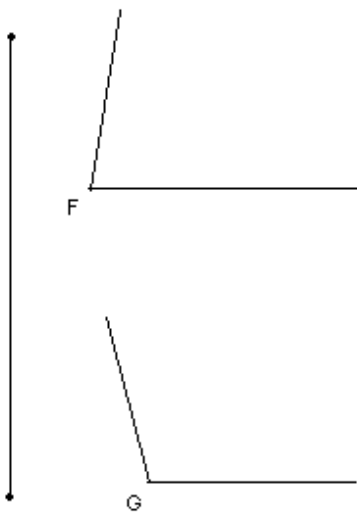


Construct a triangle given one side and two adjacent angles with compass and straightedge

1. Construct a triangle which has one side equal to the given line segment and where the angles at each end of that segment are equal in measure to the angles M and N.

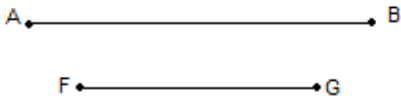


2. Construct a triangle which has one side equal to the given line segment and where the angles at each end of that segment are equal in measure to the angles F and G. Explain any problem you may have with the construction.



Construct an isosceles triangle of given base and side length with compass and straightedge

1. Construct an isosceles triangle whose base is equal in length (congruent to) the segment FG, and whose legs are congruent to AB.



2. (a) Construct two isosceles triangles with base CD and legs AB, which share a common base, as shown in the example.
 (b) The leg and base lengths are in the ratio of $1 : \sqrt{2}$. What are the measures of all 6 interior angles in the finished construction?
 (c) Confirm this by measuring them with a protractor, and explain this result.

