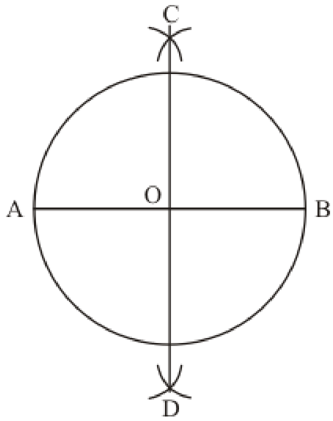
Constructions Ex 17.1 Q3

Answer :

We are asked to draw the circle centered at O of radius 5 cm with its chord AB

We will follow the following algorithm for the construction



We follow the following steps:

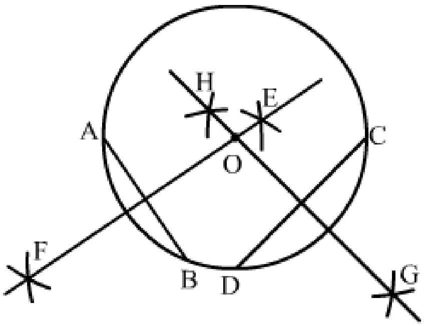
STEP1: Draw a circle with centre at point O and radius 5 cm.
STEP2: Draw its cord AB.
STEP3: With A as centre and radius more than half of AB, draw two arcs, one on each side of AB.
STEP4: With B as centre and the same radius as in step3, draw arcs cutting the arcs drawn in the previous step at C and D respectively.
STEP5: Draw the line segment with C and D as end-points.
The line segment CD is the required perpendicular bisector of AB. Since CD is perpendicular bisector of AB which is chord of circle, hence it passes through the centre of the circle.

Constructions Ex 17.1 Q4

Answer :

We are asked to draw a circle centered at O and two chords AB and CD

We will follow the following algorithm for the construction



Steps of construction

STEP1: With centre O, draw a circle of any radius.
STEP2: Draw any two chords AB and CD, such that the two chords are not parallel.
STEP3: With centre B and taking any radius (more than half of AB), draw two arcs, one on each side of the chord AB.
STEP4: With centre A, and taking the same radius, draw two arcs, one on each side of the chord AB, cutting the previous arcs in E and F respectively.
STEP5: Draw a line segment with E and F as end-points. It passes through centre O.
STEP6: With centre C and taking any radius (more than half of CD), draw two arcs, one on each side of the chord CD.
STEP7: With centre D, and taking the same radius as in STEP 6, draw two arcs, one on each side of the chord CD, cutting the previous arcs in G and H respectively.
STEP8: Draw a line segment with G and H as end-points. This also passes through centre O. It is clear that perpendicular bisectors EF and GH intersect at point O, which is the centre of the circle.

*********** END **********