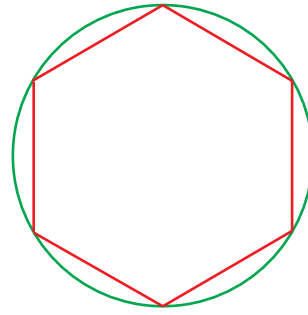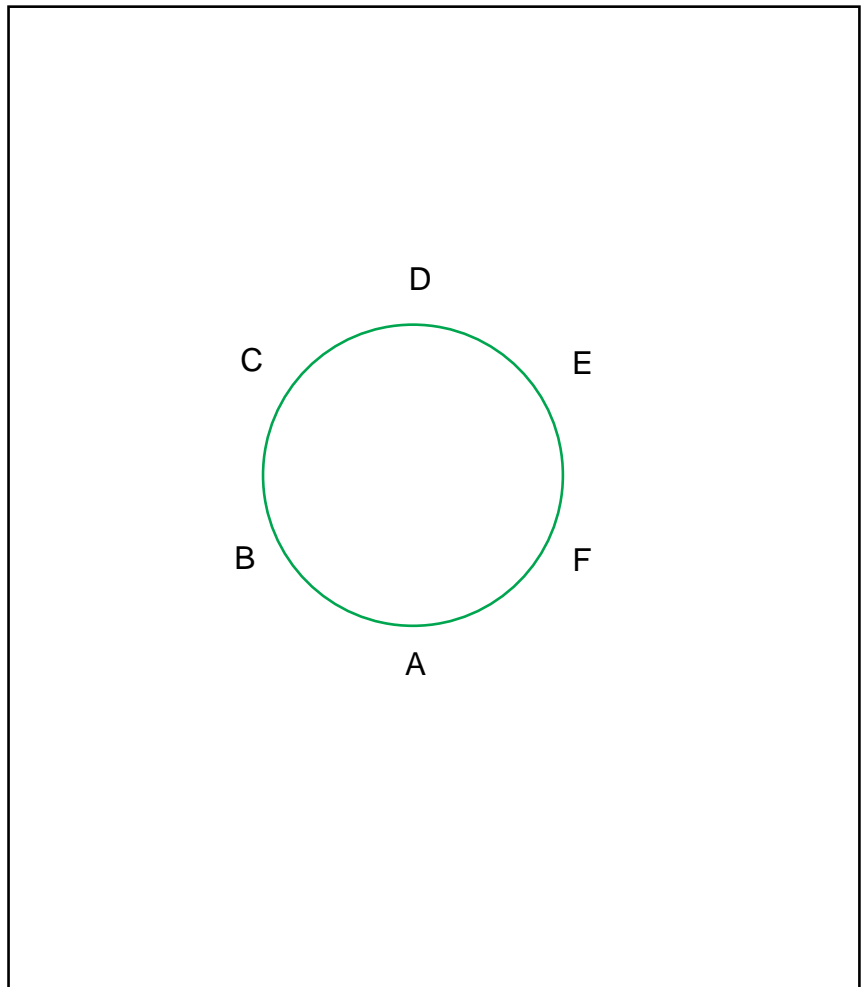# Construction 37: Book IV, Proposition 15

In a given circle to inscribe an equilateral and equiangular hexagon.
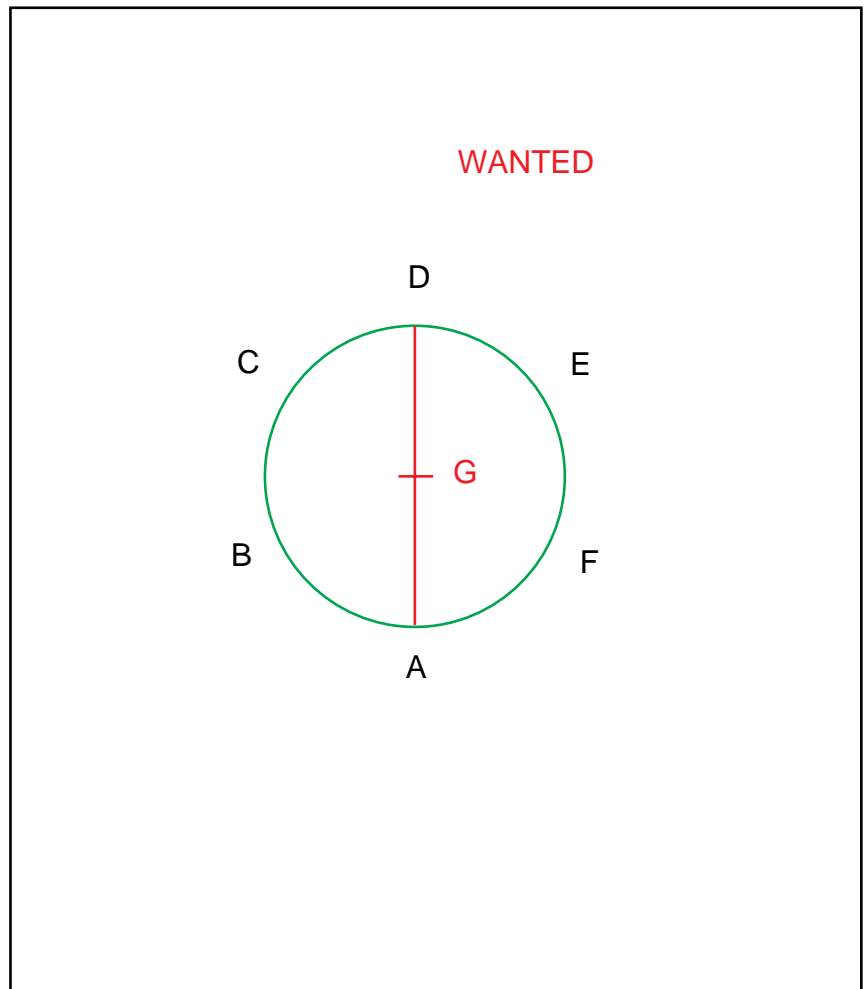
IV.15:3. Let ABCDEF be the
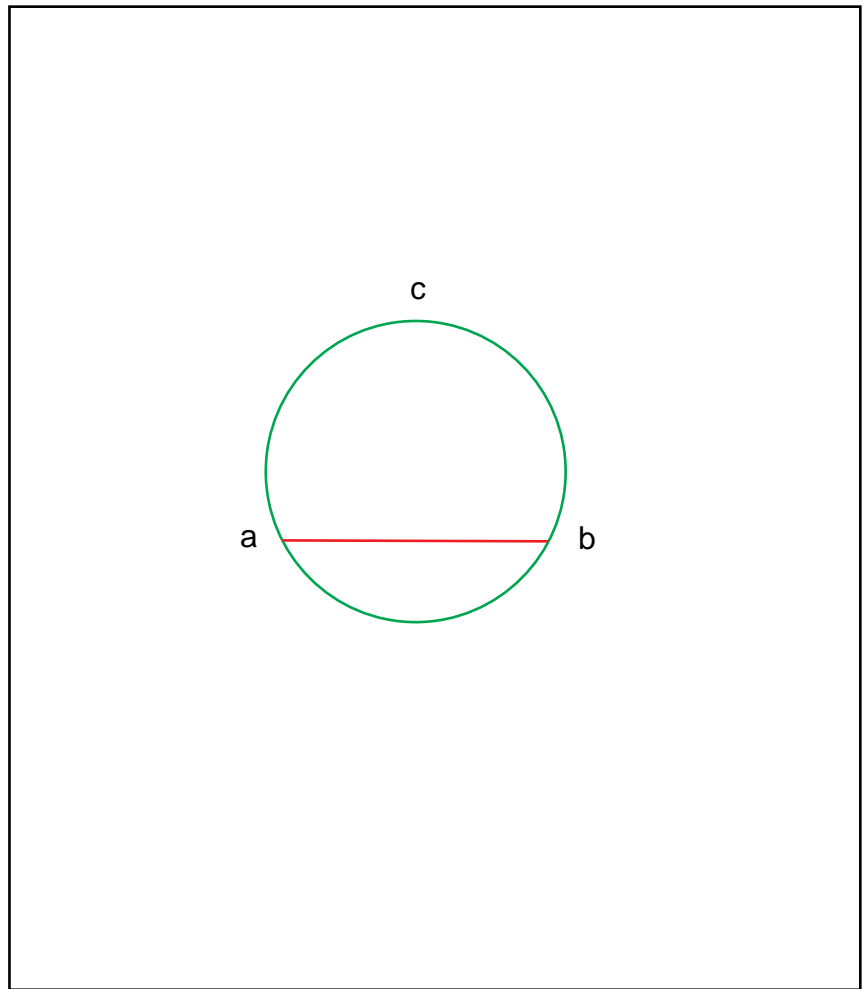given circle;

D

C

E

B

F

A

IV.15:6. Let the diameter AD of
the circle ABCDEF be drawn; let
the centre G of the circle be taken
([III.1])

WANTED

D

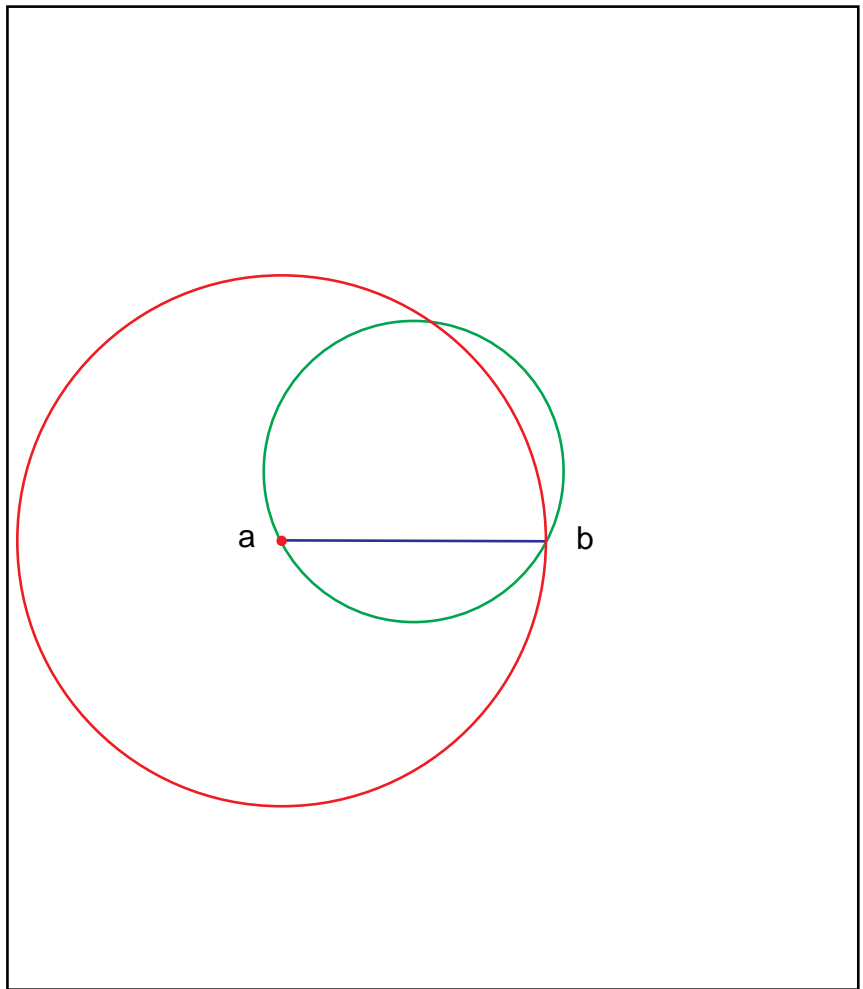C

E

G

B

F

A

GOSUB III.1.
Relabel.

III.1:2. Let abc be the given circle;

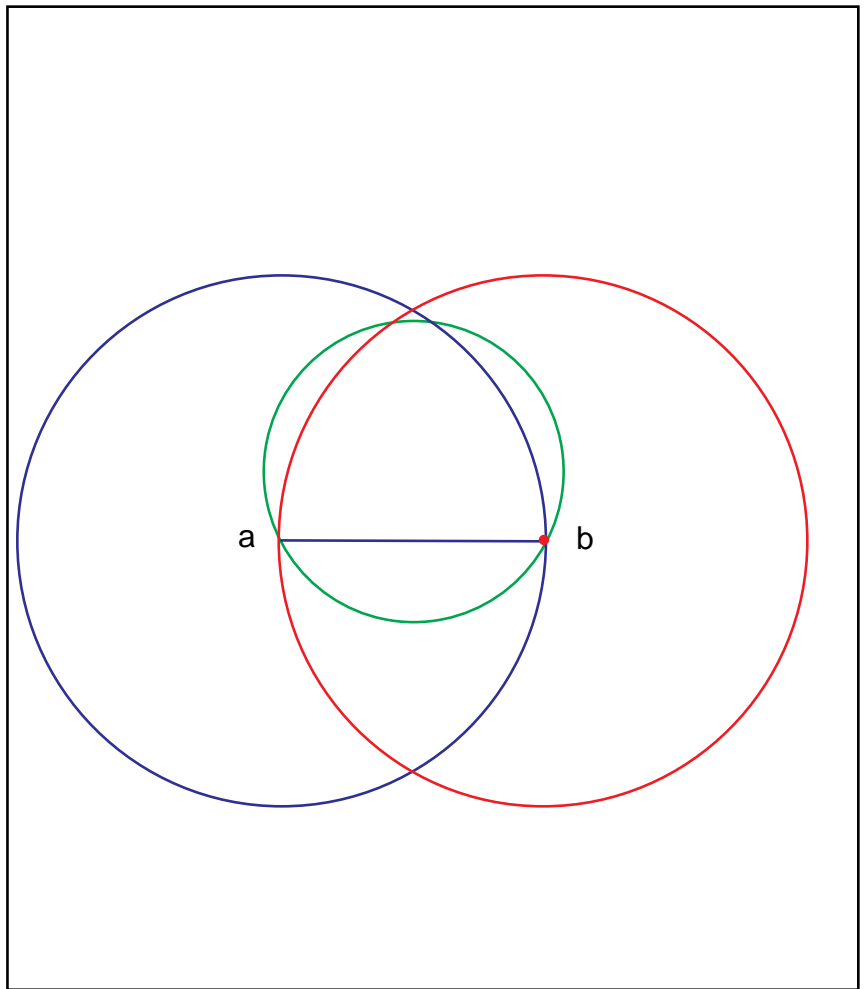III.1:4. Let a straight line ab be drawn through it at random,

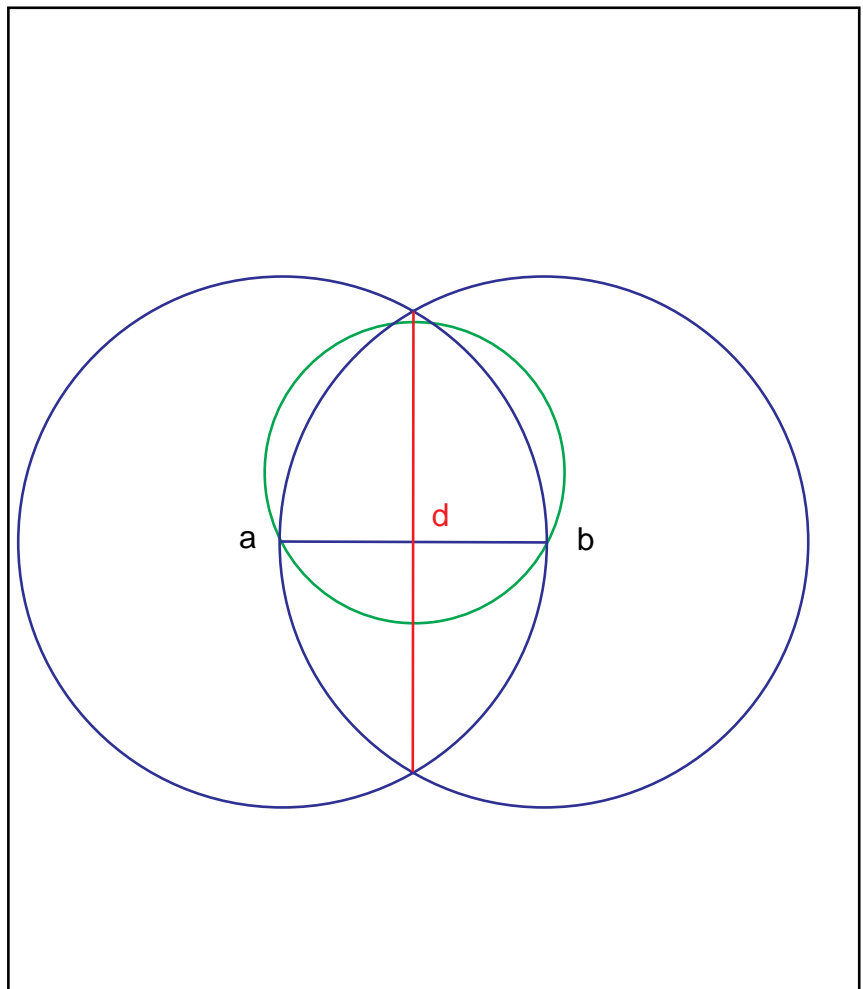III.1:5. and let it be bisected at
the point d; ([I.10])

GOSUB I.10 (C#5B)
Swing ab around a.

Swing ba around b.

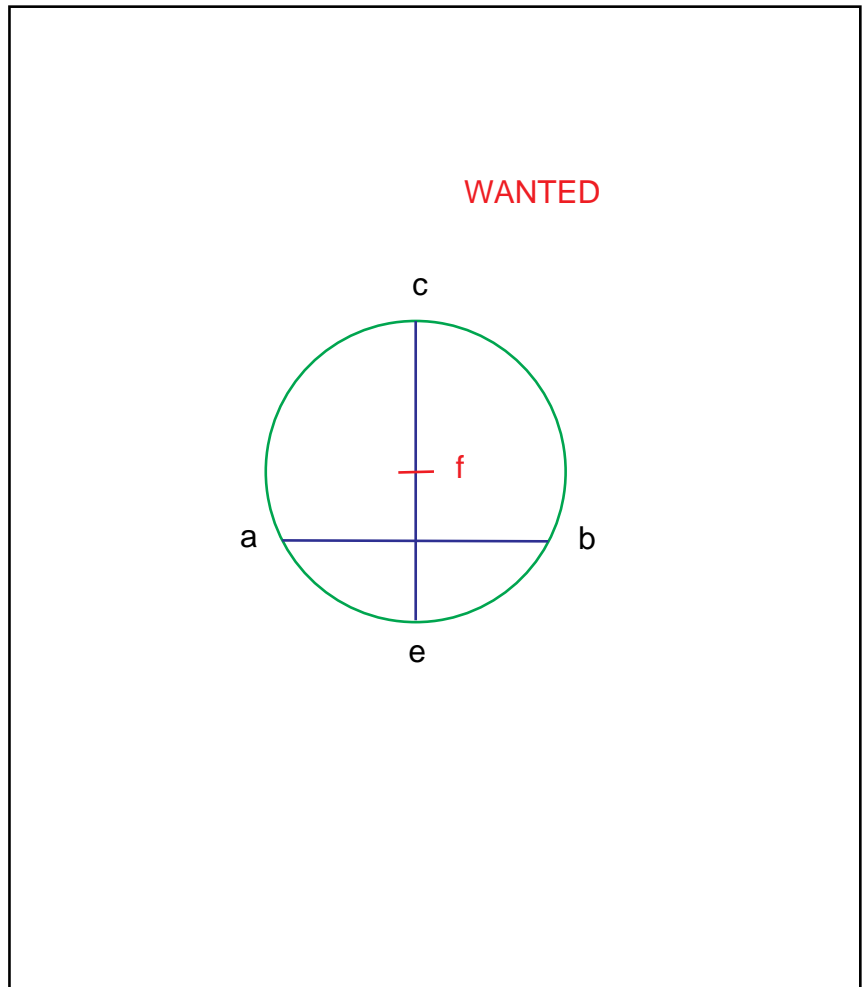Connect the crossing points. Mark the point d which is the bisector of ab.

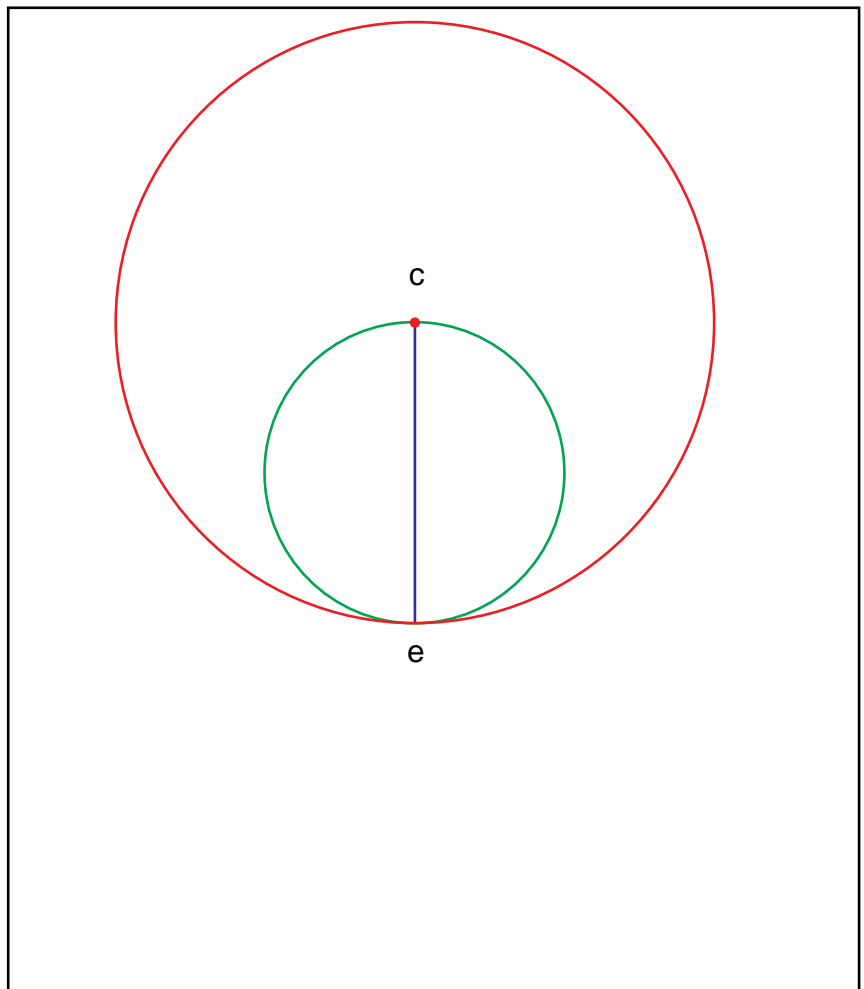Cleanup (preserve the new line in anticipation).

RETURN to III.1:5.

III.1:7. from d let dc be drawn
through at right angles to ab and
let it be drawn through to e;
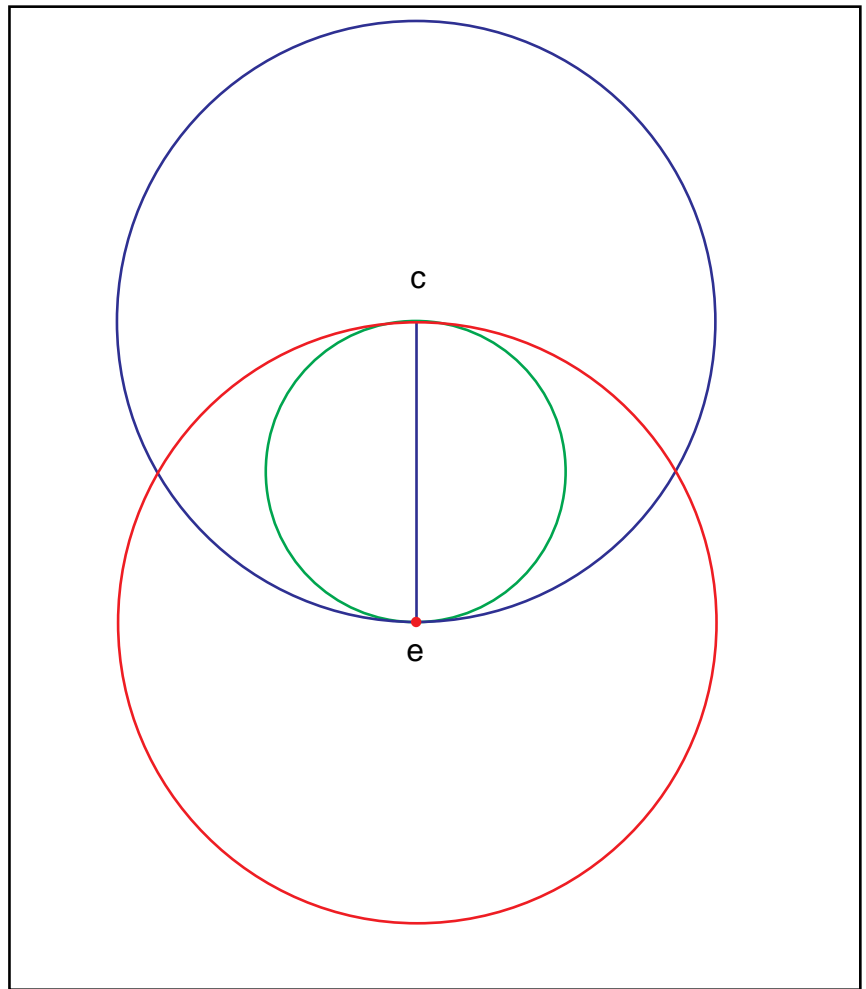let ce be bisected at f; ([I.10])

GOSUB I.10 (C#5B, again).

WANTED

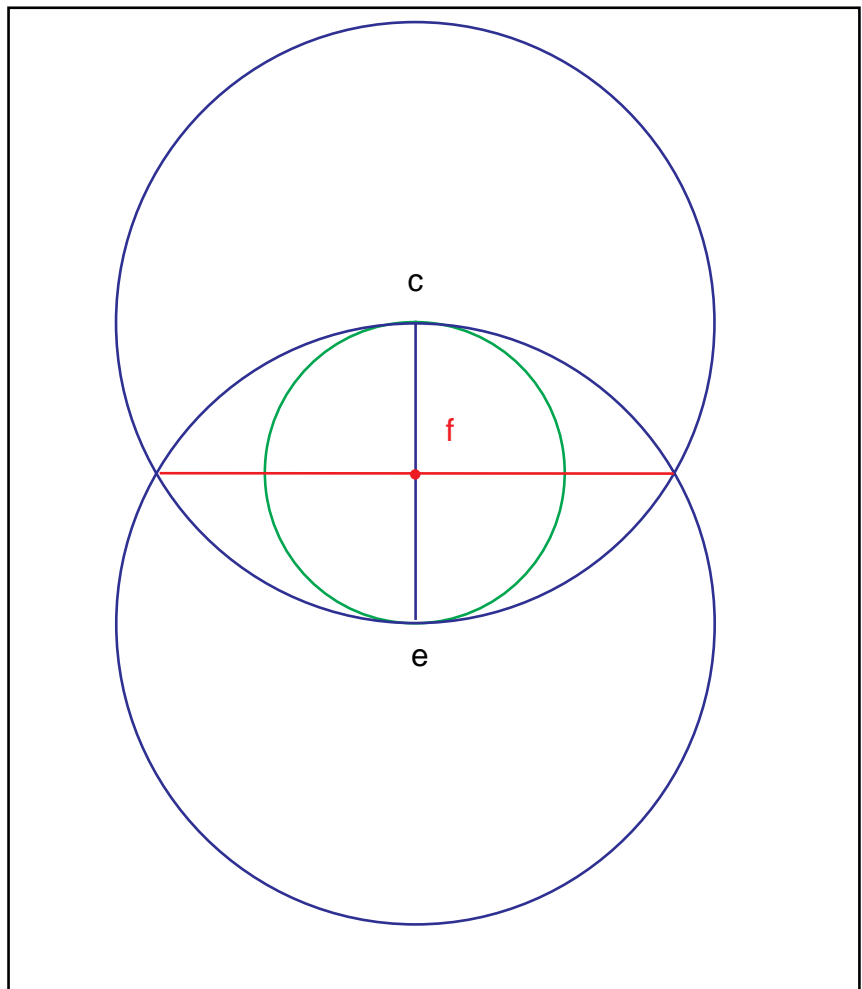Swing ce around c.

Swing ec around e.

Connect the crossing points. Mark
the point f.

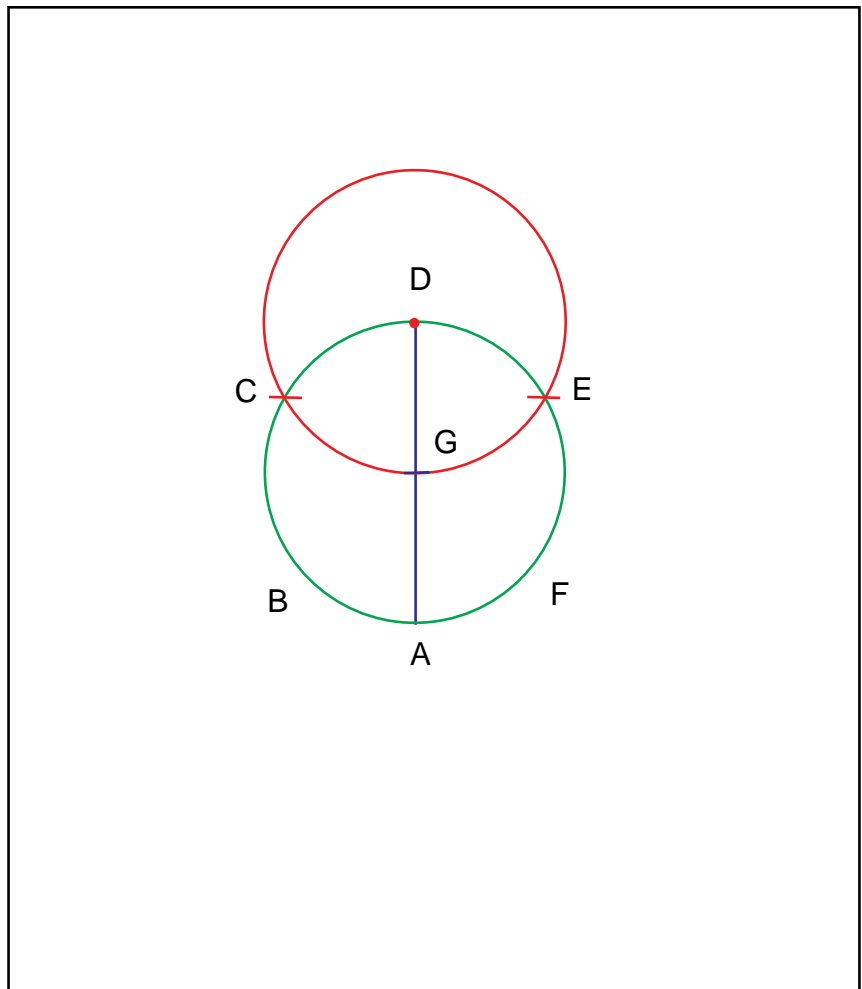Cleanup. Preserve ce.
RETURN to III.1:7.

RETURN to IV.15:6.
Relabel.

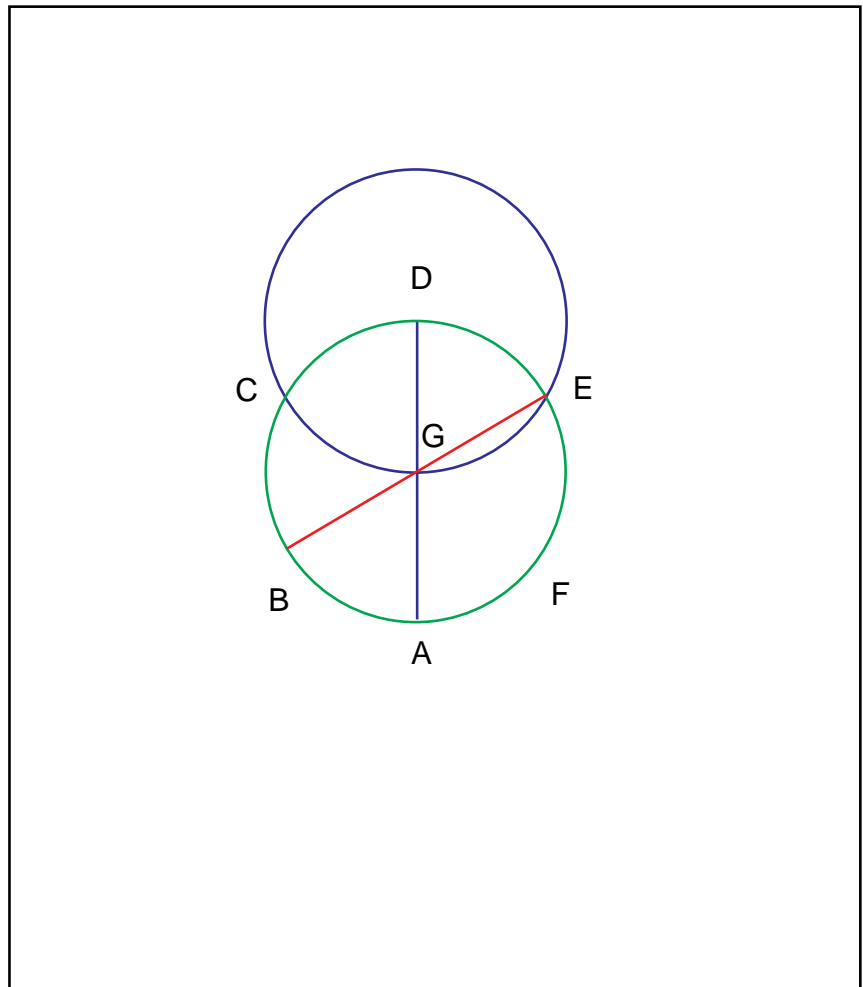A and D now label the endpoints of
the diameter.

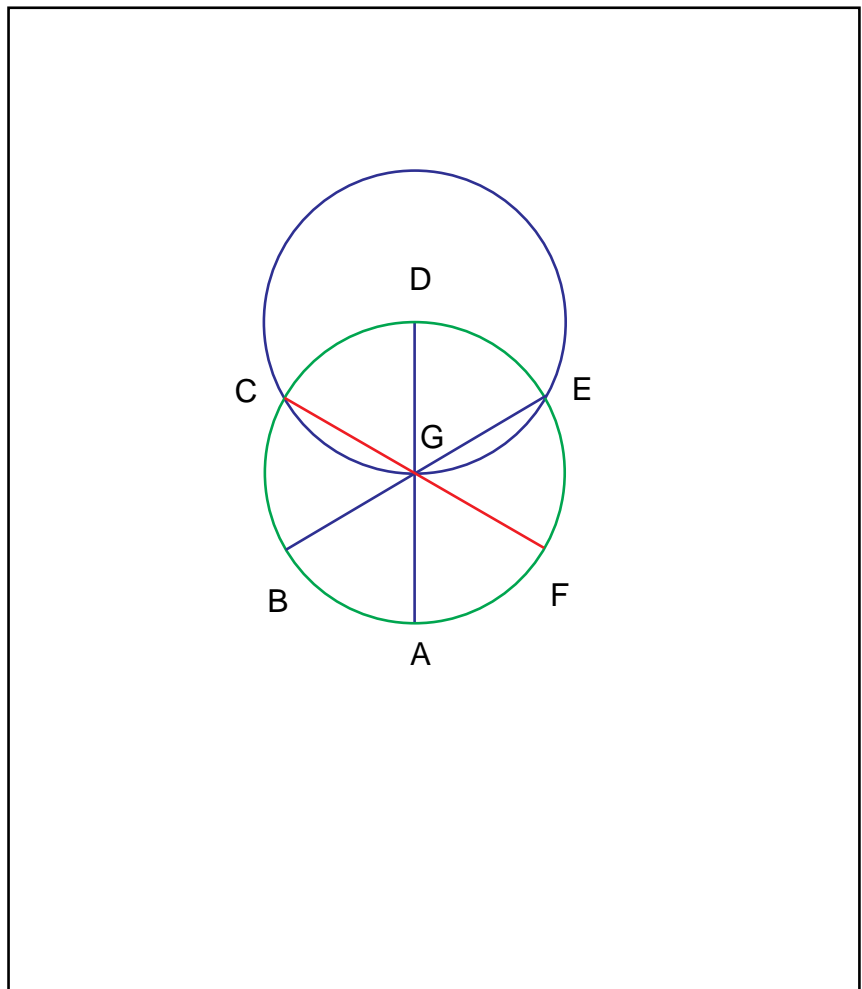IV.15:8. and with centre D and distance DG let the circle EGCH be described;

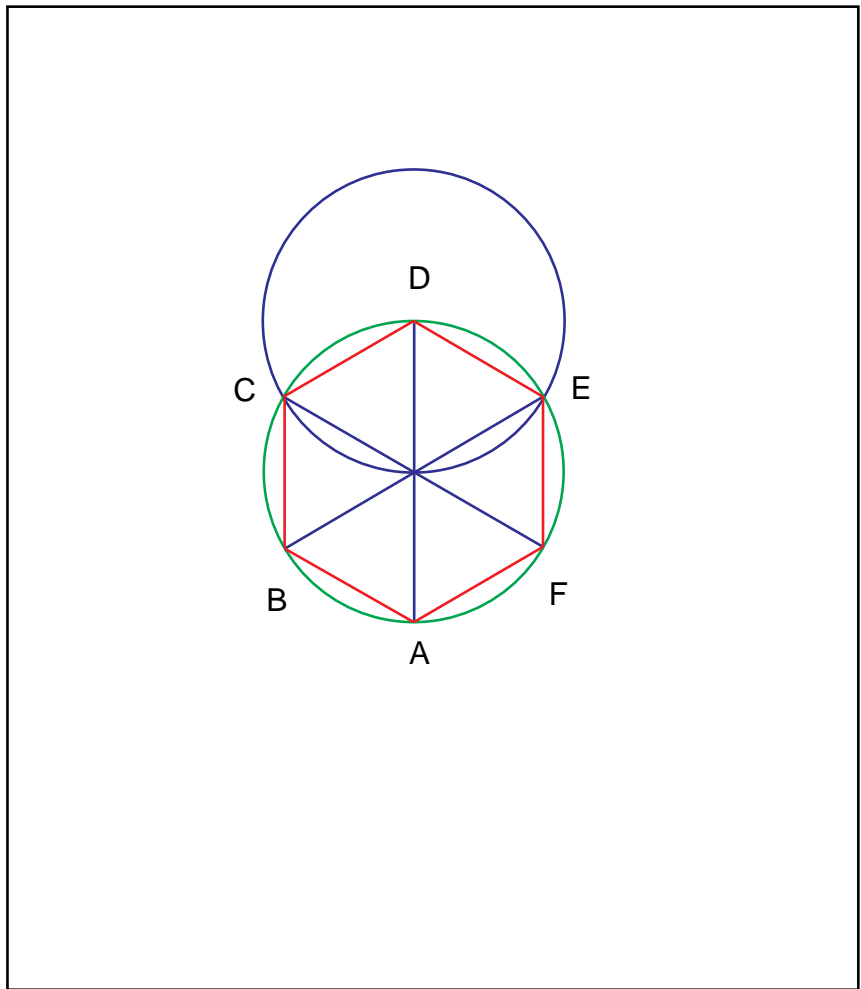C and E now label the crossing points of the two circles.

IV.15:11. let EG, CG be joined
and carried through to the points
B, F,

IV.15:11. let EG, CG be joined and carried through to the points B, F,

IV.15:13. and let AB, BC, CD,
DE, EF, FA be joined.

Cleanup.

Done.