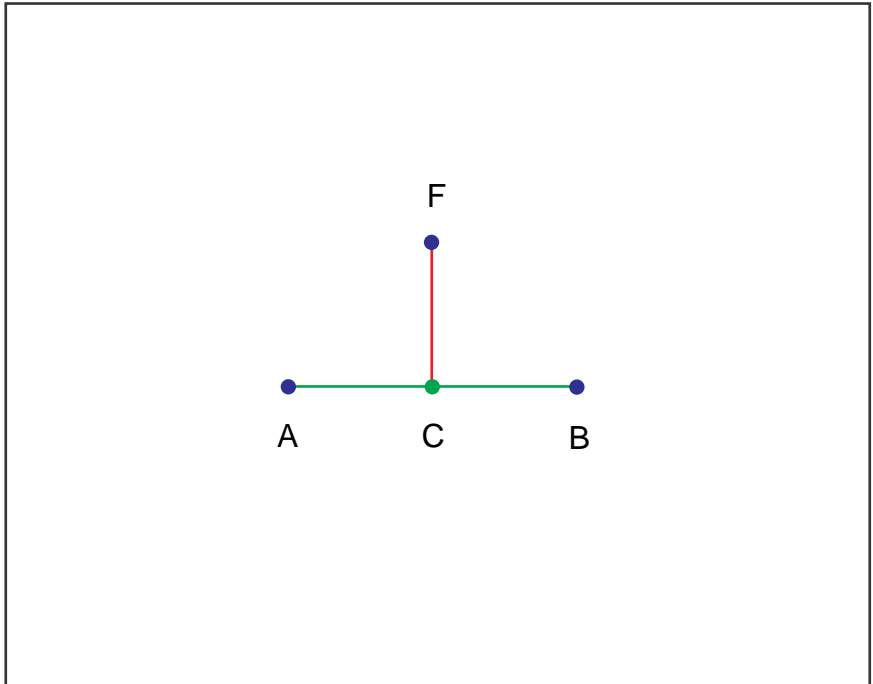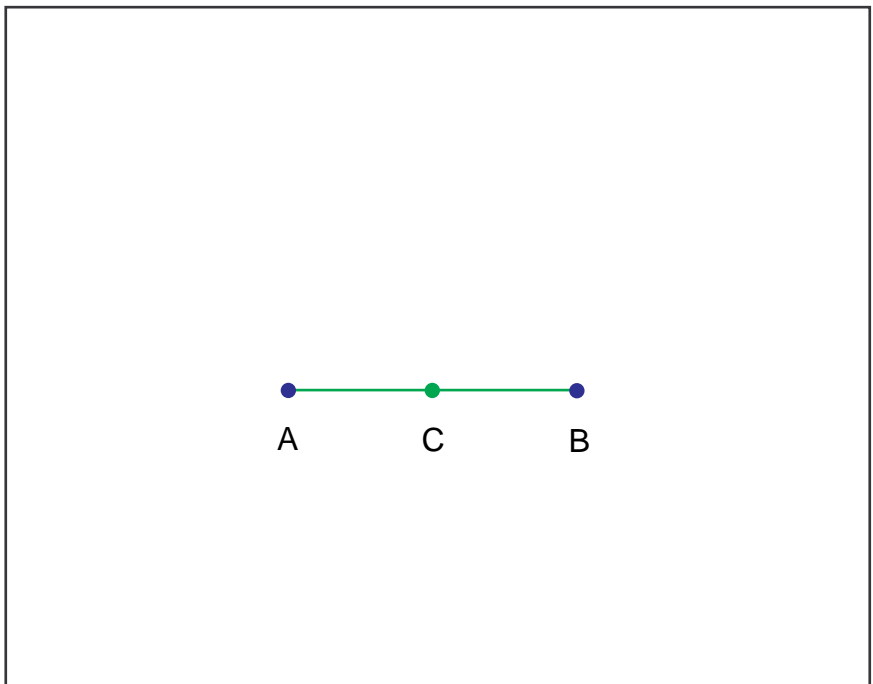# Construction 6: Book I, Proposition 11
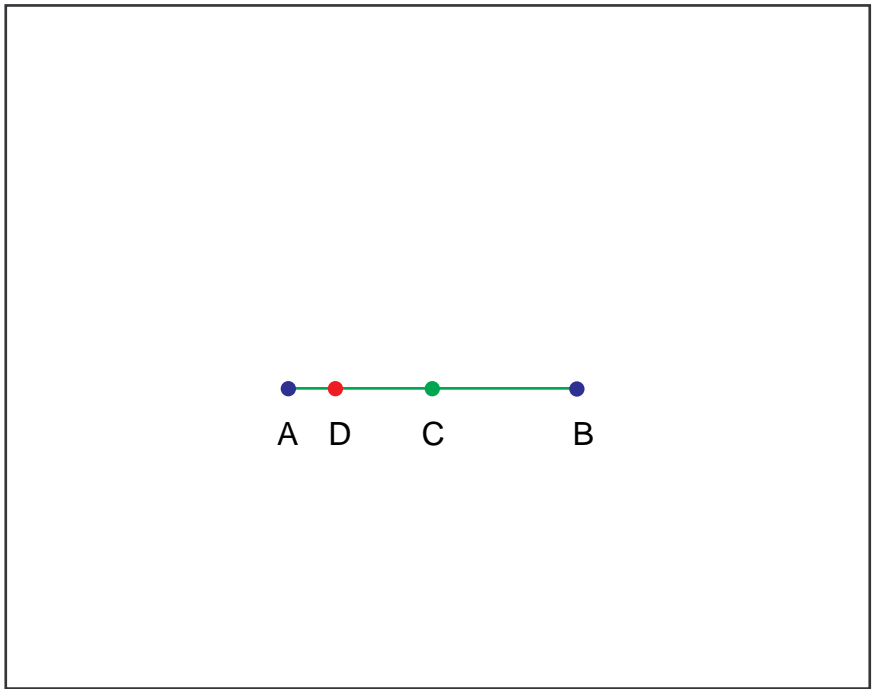
To draw a straight line at right angles to a given straight line from a given point on it.

F

A   C   B

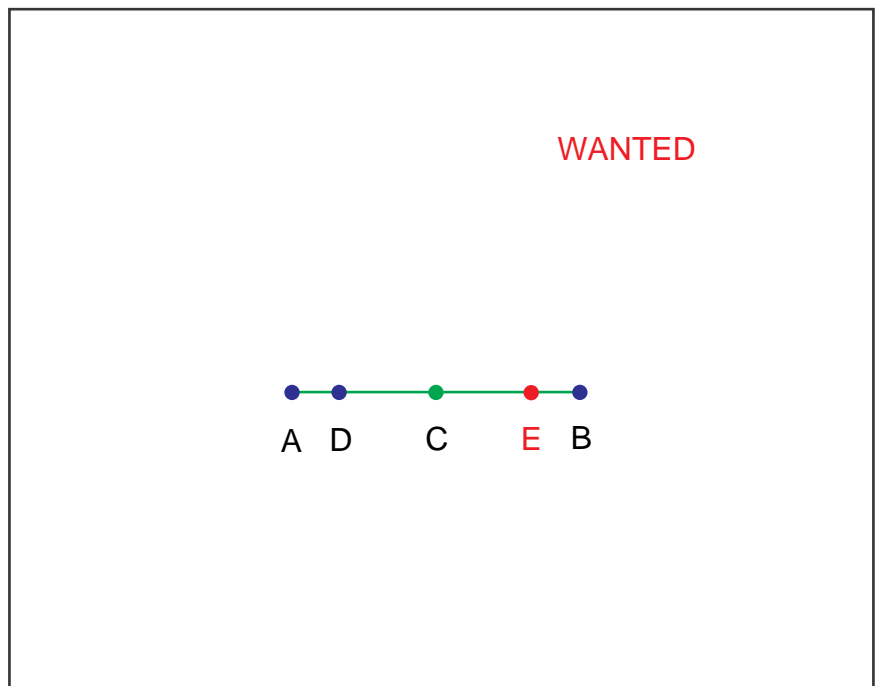I.11:3. Let AB be the given straight line, and C the given point on it.

A   C   B

I.11:8. Let a point D be taken at random on AC;

A D   C   B

I.11:10. let CE be made equal to CD; [I.3]

GOSUB I.3.
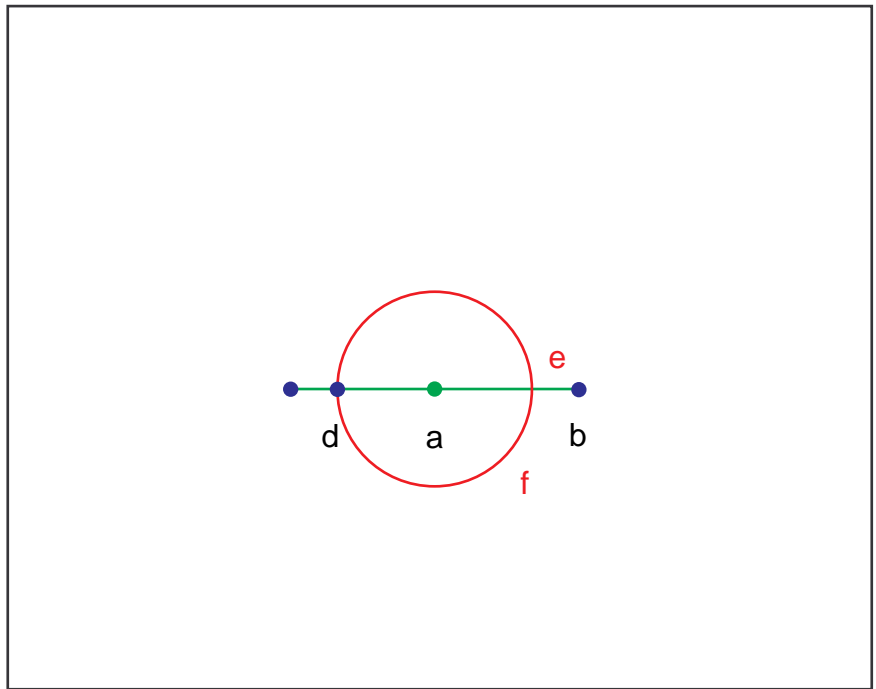
Relabel.

WANTED

A D   C   E B

 I.3:12. and with centre a and dis-
tance ad let the circle def be
described. [Post.3]
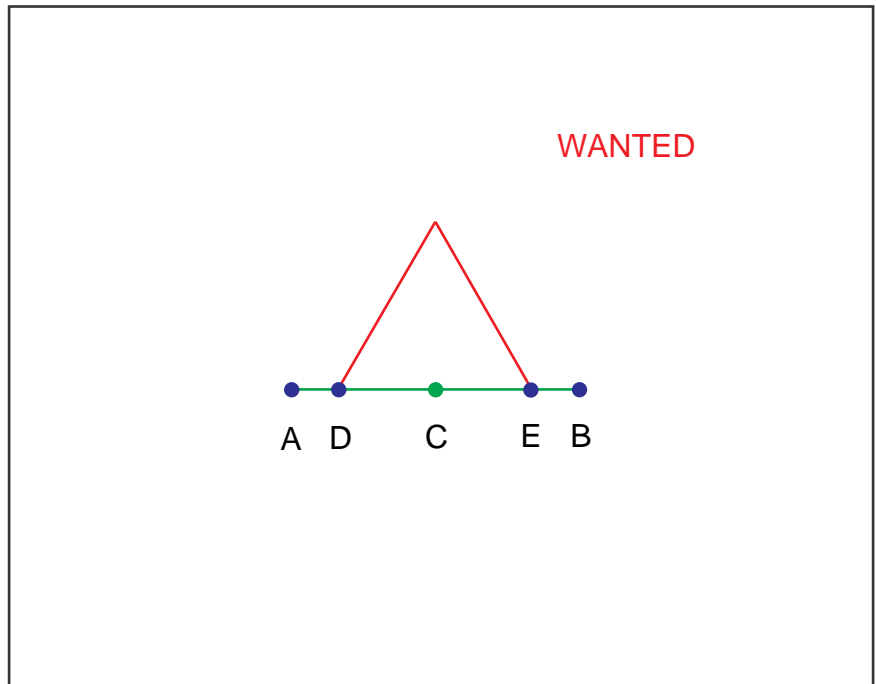
Cleanup.

Relabel.

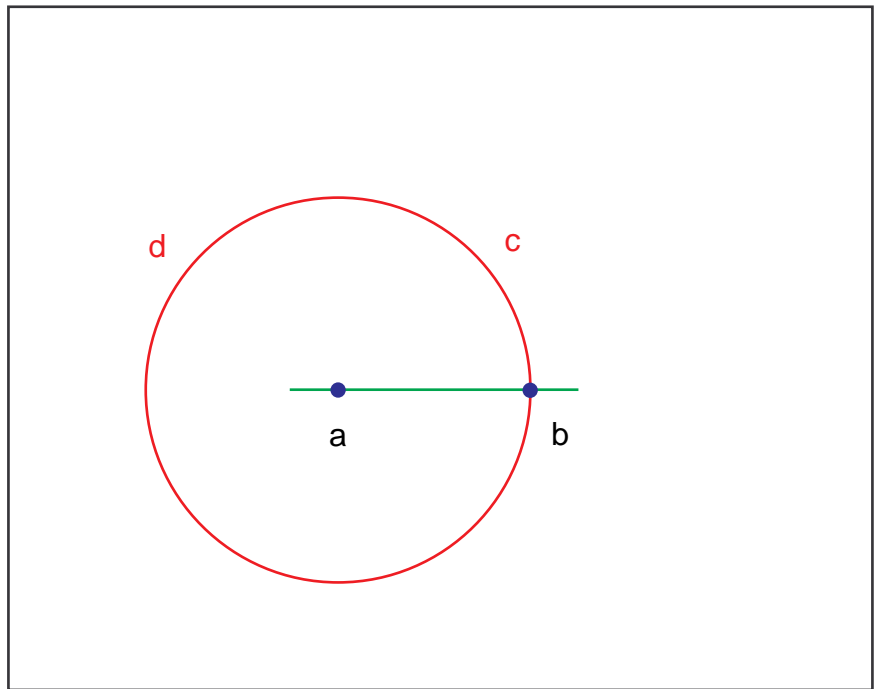RETURN to I.11 at line 10.

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I.11:11. on DE let the equilateral
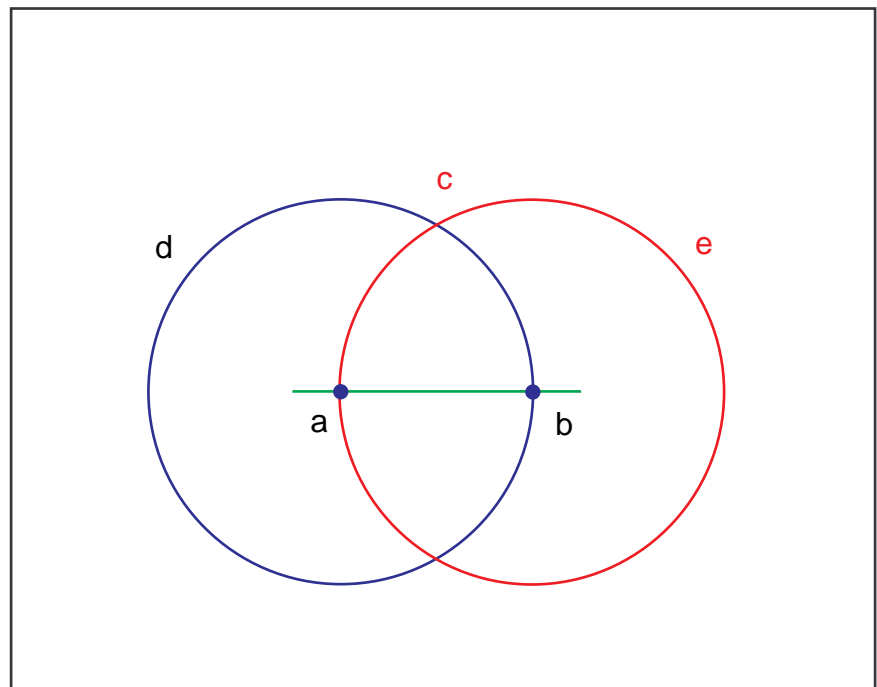triangle FDE be constructed, [I.1]

GOSUB I.1. Relabel .

I.1:7. with centre a and distance ab let the circle bcd be described; [Post.3]
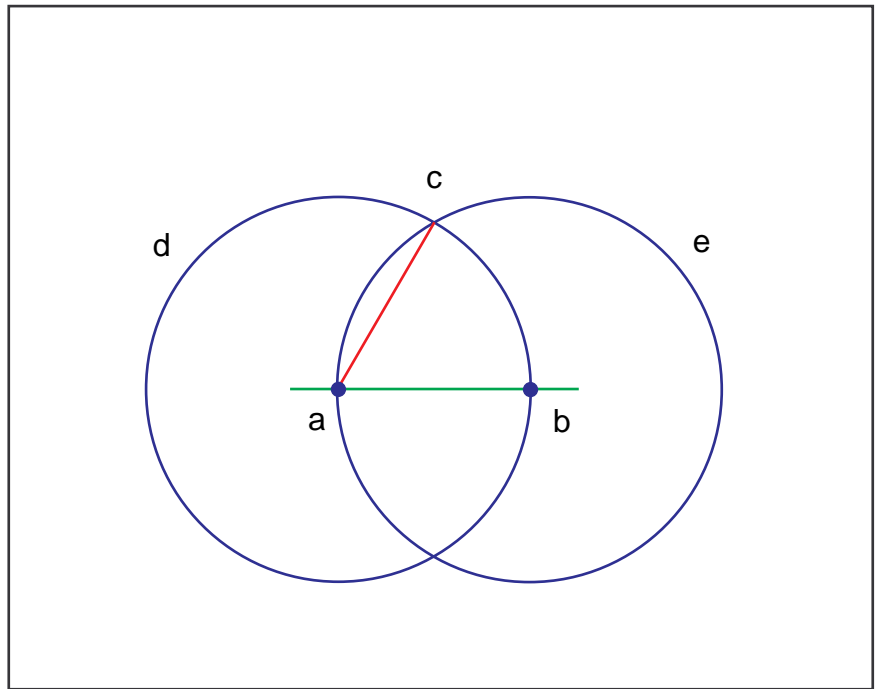

I.1:10. again, with centre b and distance ba let the circle ace be described; [Post.3]
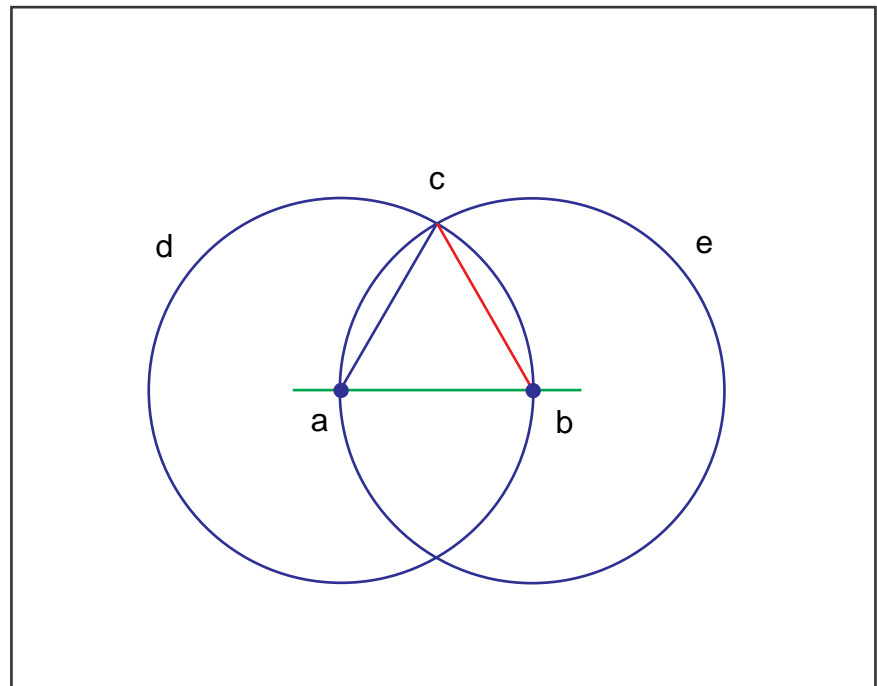
I.1:13. and from the point c, in which the circles cut one another, to the points a, b let the straight lines ca, cb be joined. [Post.1]
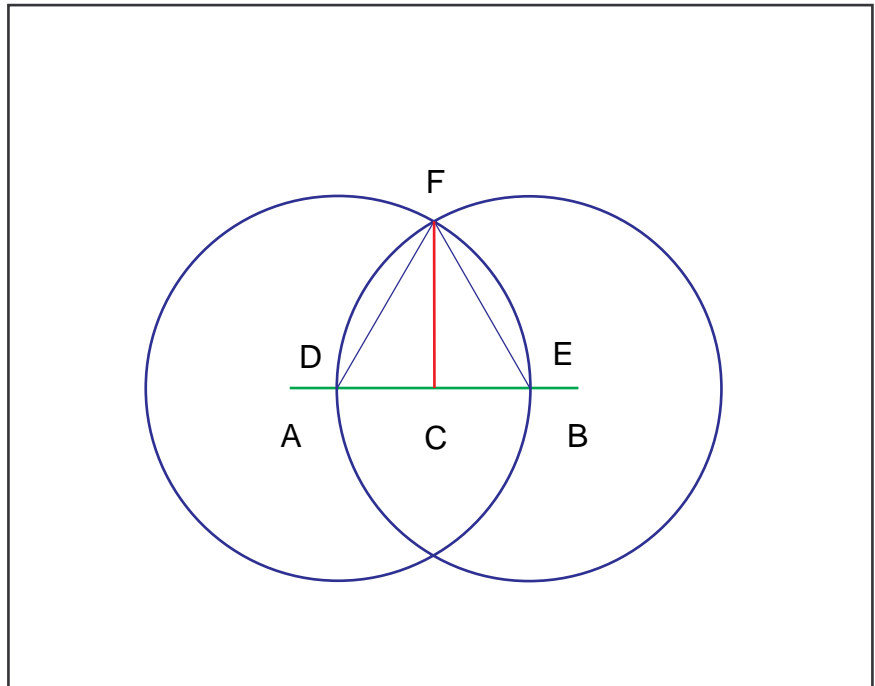
(first, ca).

(then cb).

Relabel and RETURN to I.11 at line 11. We keep the two circles as the equilateral triangle is actually unneccessary.

I.11:13. and let FC be joined;

Cleanup.

I.11:28. Therefore the straight
line CF has been drawn at right
angles to the given straight line
AB at the given point C on it.

Q.E.F.