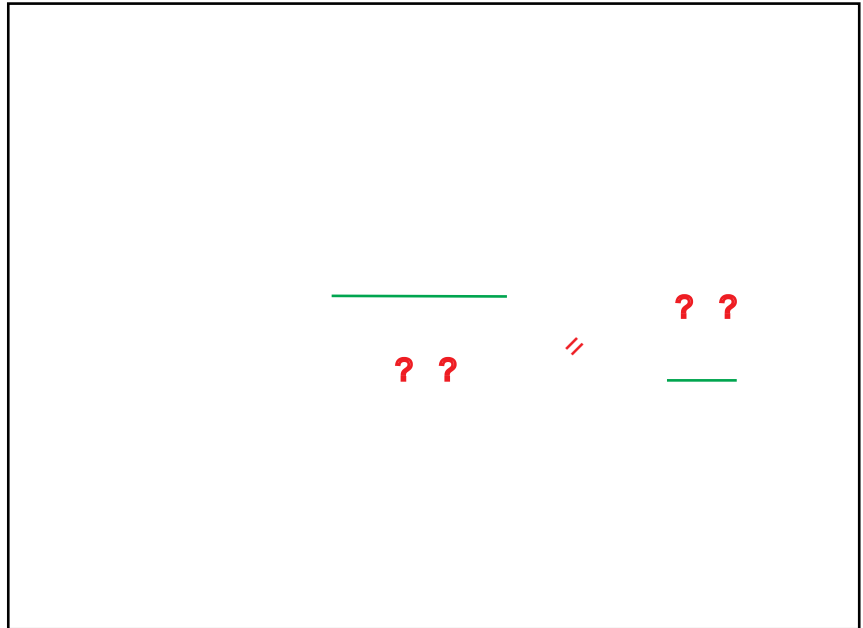


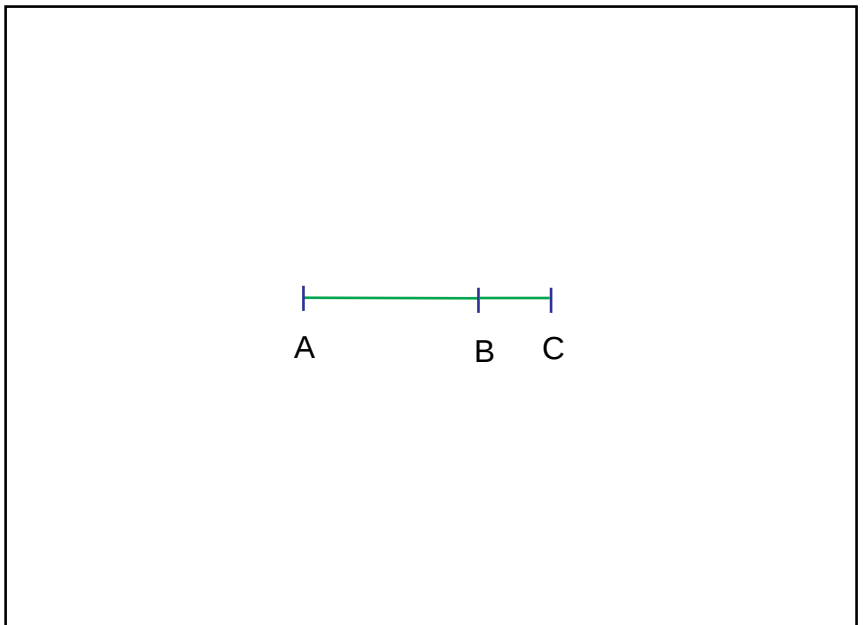
Construction 43: Book VI, Proposition 13

To two given straight lines to find a mean proportional.



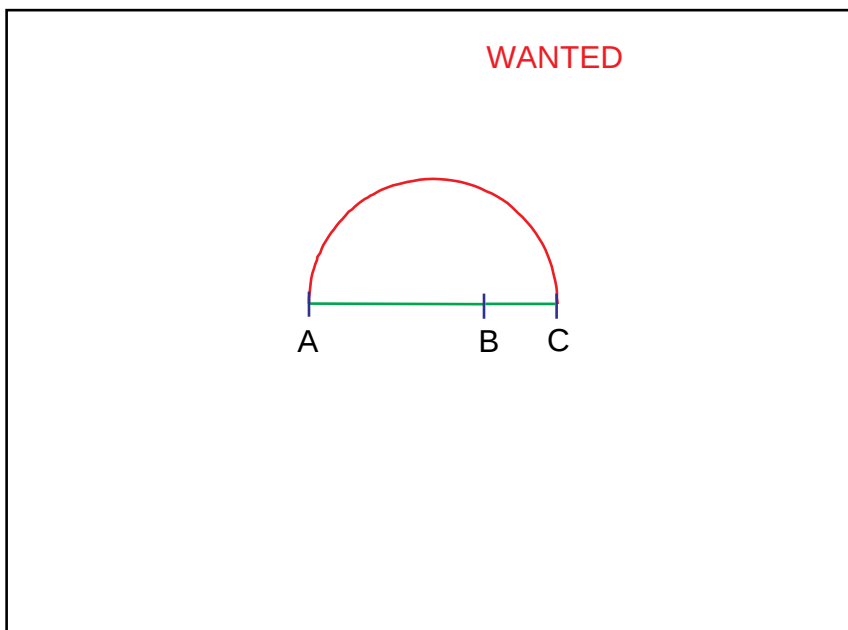
VI.13:2. Let AB, BC be the two given straight lines;

VI.13:5. . Let them be placed in a straight line,

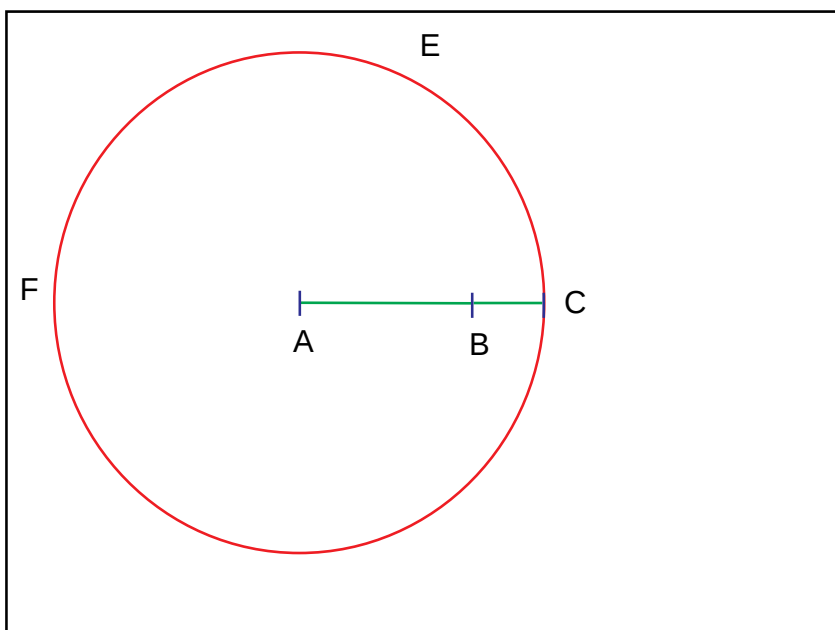


VI.13:6. and let the semicircle
ADC be described on AC; ([I.10])

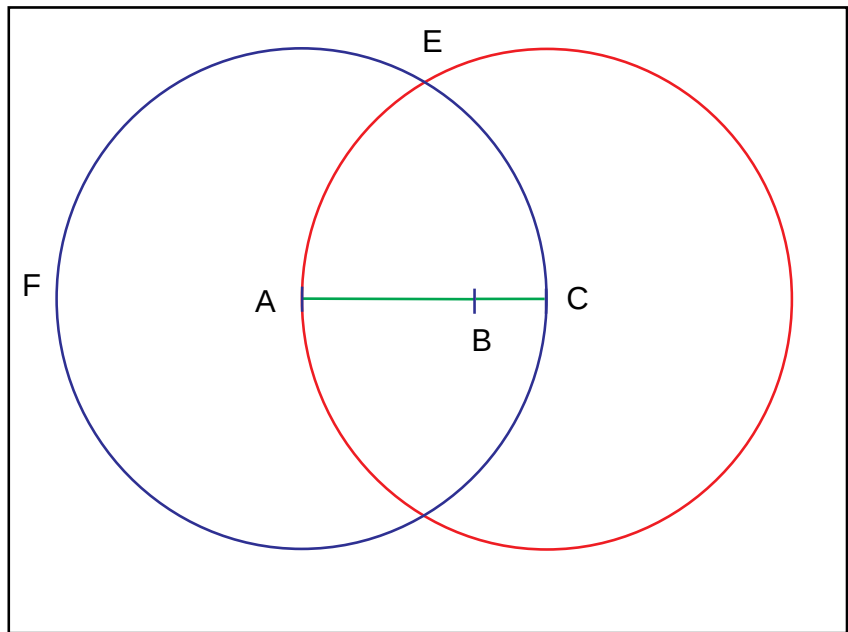
GOSUB I.10, C#5B.
Retain current labels.



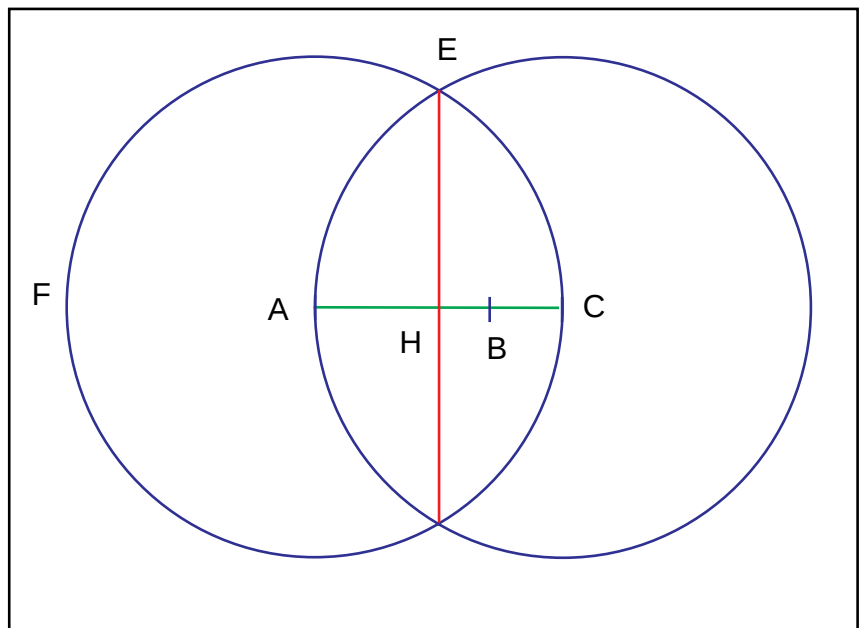
I.1:7. With centre A and distance
AC let the circle CEF be
described;



I.1:10. again, with centre C and distance CA let the circle AEG be described;

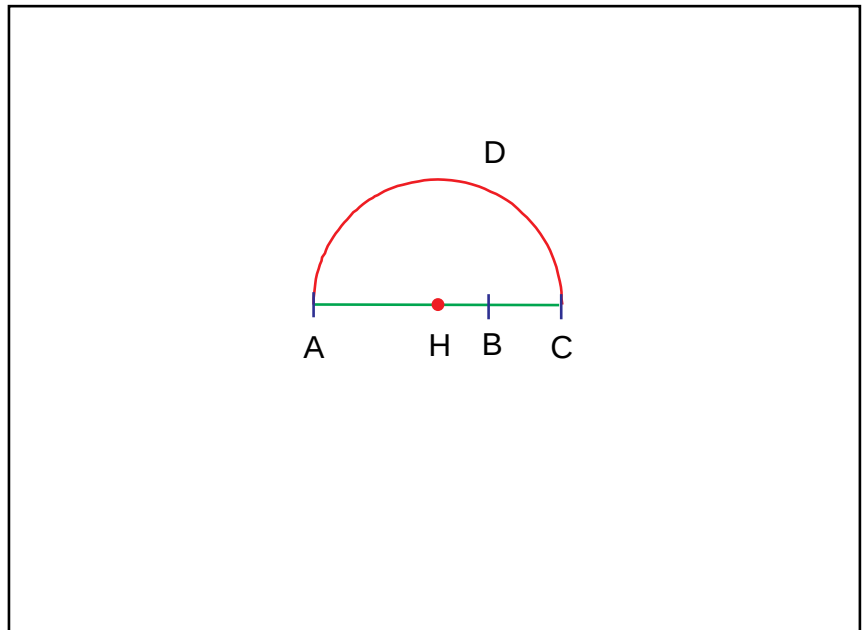


Connect the two crossing points, and mark the point H.



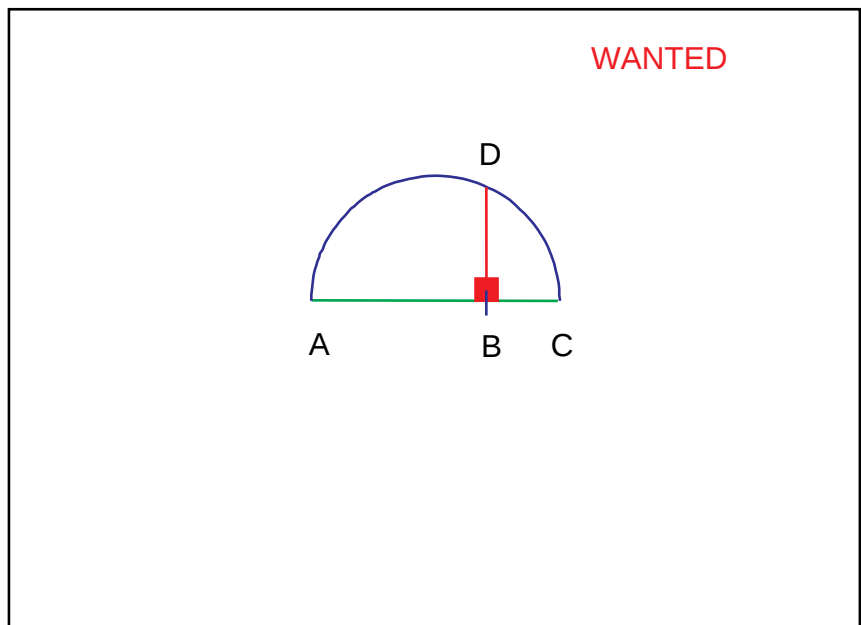
Cleanup.
RETURN to VI.13:6.

VI.13:6. and let the semicircle ADC be described on AC (with centre H and distance AH);

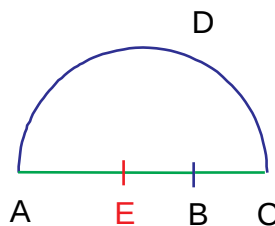


VI.13:8. let BD be drawn from the point B at right angles to the straight line AC, ([I.11])

GOSUB I.11, C#6.
Retain current labels.

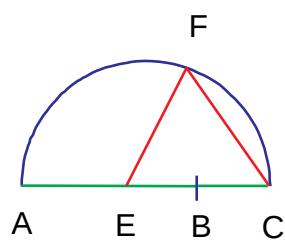


I.11:10. let BE be made equal to BC;

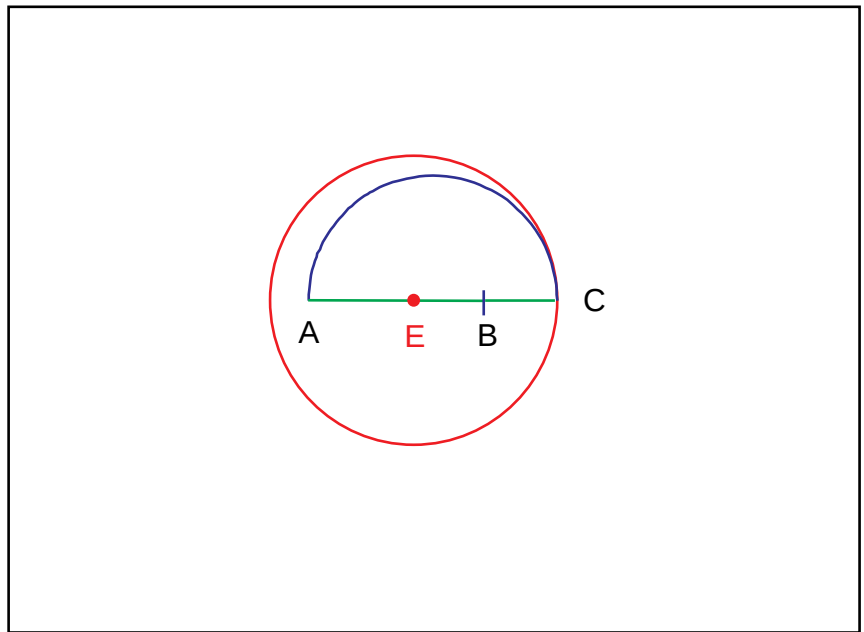


I.11:11. on CE let the equilateral triangle FEC be constructed [I.1]

GOSUB I.1, C#1.
Retain current labels.

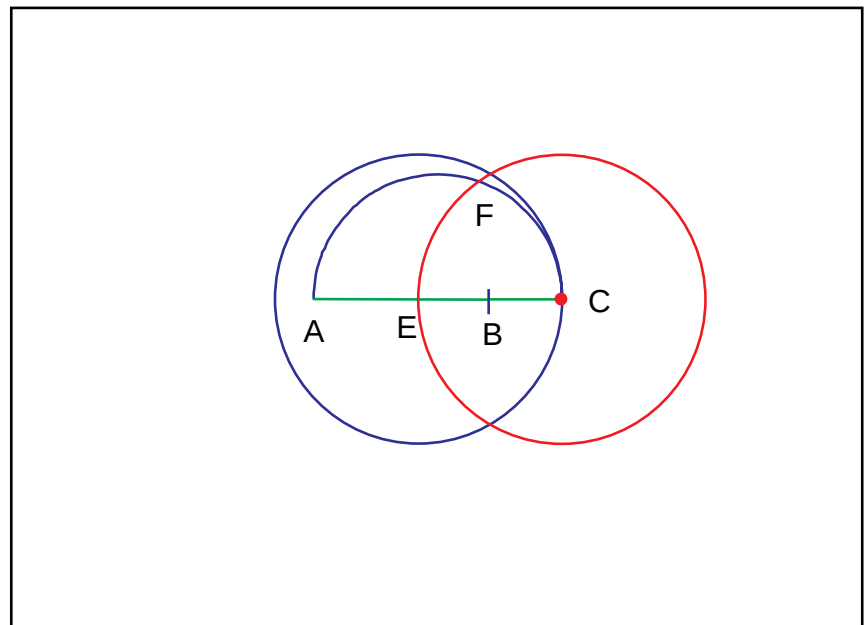


I.1:7. With centre E and distance EC let the circle ... be described;



I.1:10. again, with centre C and distance CE let the circle ... be described;

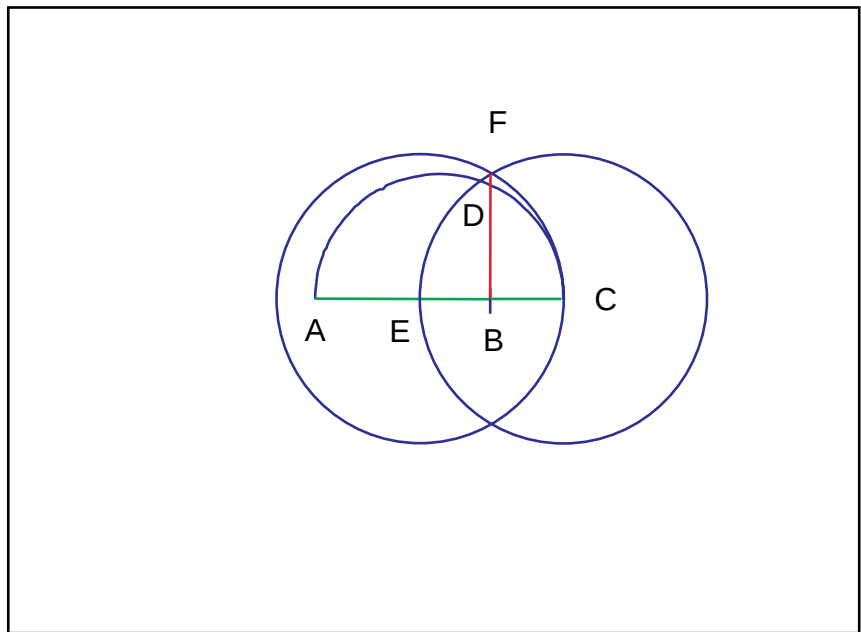
The upper crossing point determines the location of the point F.



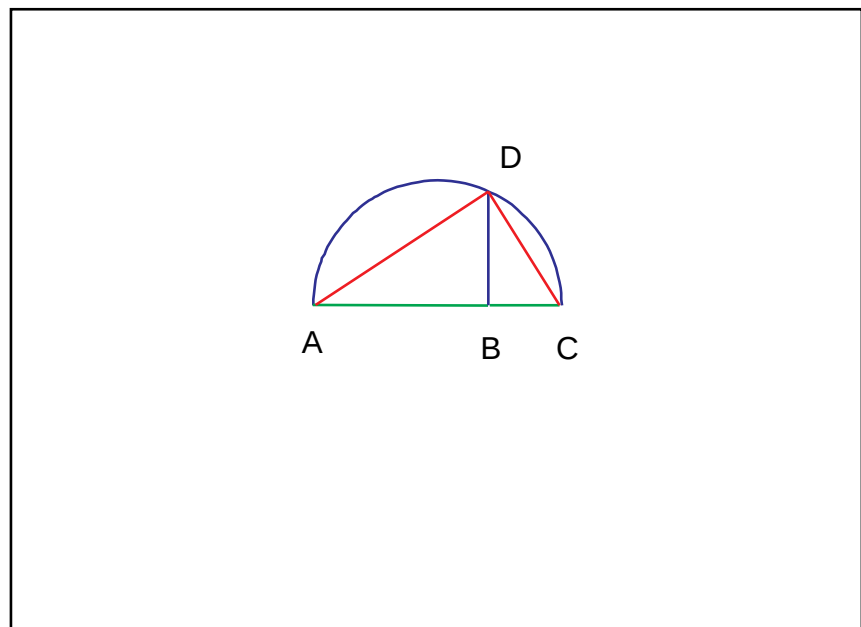
RETURN to I.11:11.

I.11:13. and let FB be joined;
 Extend this straight line as necessary to meet the semicircle ACD, thus determining the location of the point D.

Cleanup.
 RETURN to VI.13:8.



VI:13:10. and let AD, BC be joined.



VI.13:17. Therefore to the two given straight lines AB, BC a mean proportional DB has been found.

Q.E.F.

AB ————— DB ————
DB ———— BC ————