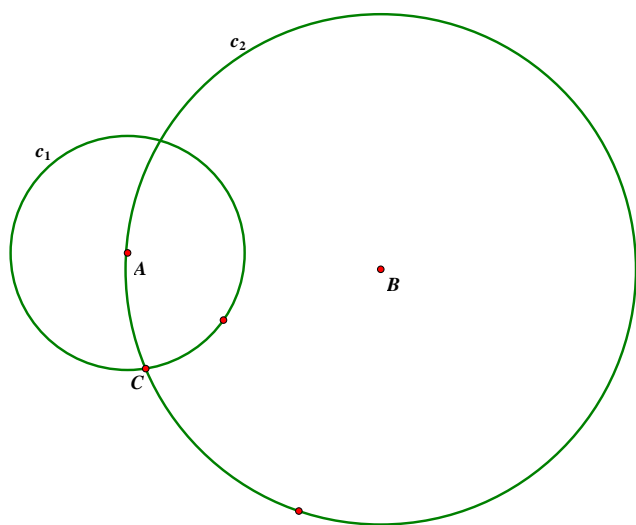# MTH 330, Fundamental concepts of geometry, Exam II, Fall 2014
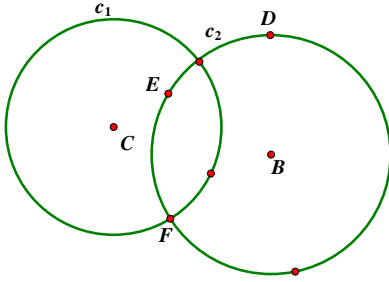
Ayman Badawi

QUESTION 1. Make sure that your solution is readable.


C1 is centered at A.   C2 is centered at B.
Construct the exact inversion of the ARC,
AC (Clockwise) of C2 with respect to C1.

QUESTION 2. Make sure that your solution is readable.


C1 is centered at C. C2 is centered at B. The inversion of the point E with respect to C1 is the point D. Construct the exact inversion of the ARC , EF (Clockwise), of C2 with respect to C1. Assume the radius of C1 is equal to the radius of C2 = 3. Let L be the inversion of the point B with resprct to C1. Find the exact length of of the line segment CL, i.e., find |CL|.
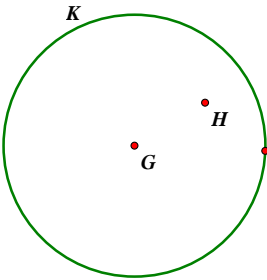

Given K centered at G and with radius 6cm. Given |GH| = 3. Let L be the inversion of H with respect to K. State the steps needed in order to construct a circle , say W, passes through H and L such that W is of radius > 6.

QUESTION 3. Make sure that your solution is readable. (**NOTE THAT AB is perpendicular to AC**)
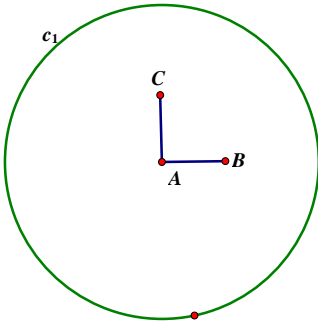
C1 centered at A and it has radius 4. |AB| = 1cm and |AC| = 2cm. Find the exact radius of the circle that passes through C, B and perpendicular to C1.
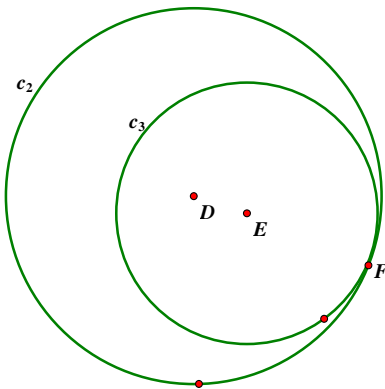
C2 centered at D and of radius 3. C3 is centered at E and of radius 2 and it intersects C2 at the point F. Given D, E, and F lie on the same line. Let C be the inversion of C3 with respect to C2. Find the exact location of the center of C. Find the exact radius of C.

QUESTION 4. Make sure that your solution is readable.
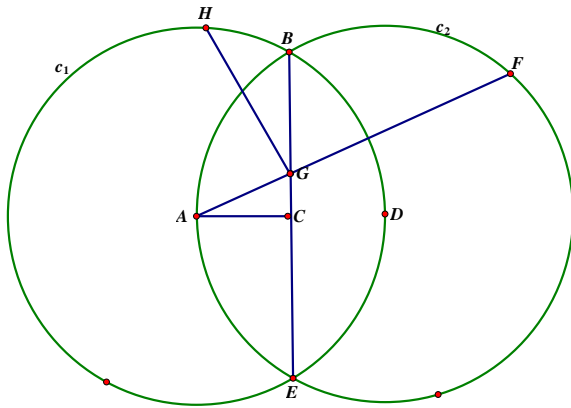
C1 Centered at A with radius 4. C2 centered at D. Given AC is perpendicular to BE, and |GC| = 1cm. Find the length of |AF|. If HG is perpendicular to AF, find |HG| and then find the length of the linesegment FH.
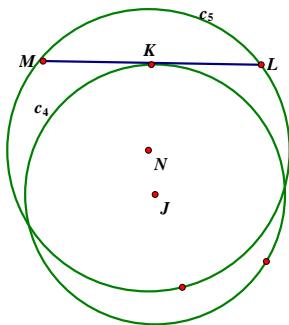
C4 centered at J. C5 centered at N. |LJ| = |MJ|. Roughly, construct the inversion of the line segment LM with respect to C4, and construct the inversion of the ARC LM of C5 with respect to C4

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