Constructing a Regular Pentagon

1   Draw a line segment AB and at each end draw a circle with the same radius so that the circles overlap and cut the segment at C and D.

2   Find the mid-point of the line segment. Call this E. Draw a line through E perpendicular to the segment.

3   Draw a circle with its centre at E and with a radius equal to the distance CD.
    Find where this circle cuts the line that is perpendicular to the original line segment.
    Call this point F.

4   Find the mid-point of EF. Call this G.

5   Draw a circle with radius FG, centred at F. Find the point where this circle intersects the line FD. Call this point H.

6   Draw a circle centred at the point D with radius DH. Find the point where this circle cuts EF. Call this I.

7   DI and CI are sides of the pentagon. To find the other vertices of the pentagon draw circles centred at C and D with radius CI (or DI). The vertices J and K are where these cut the original circles.
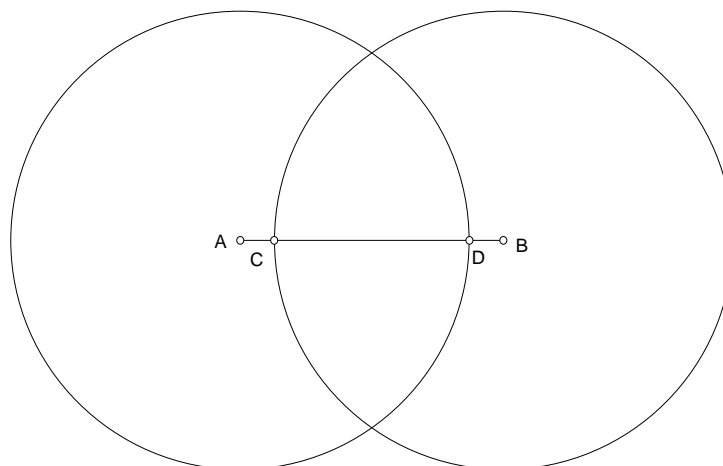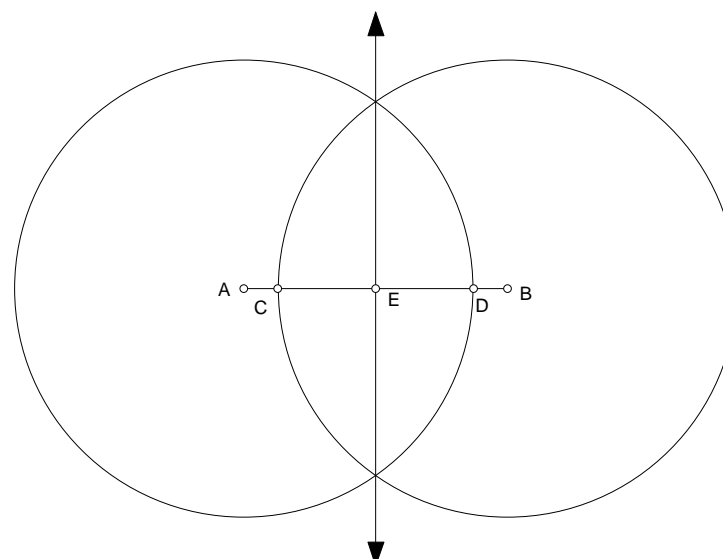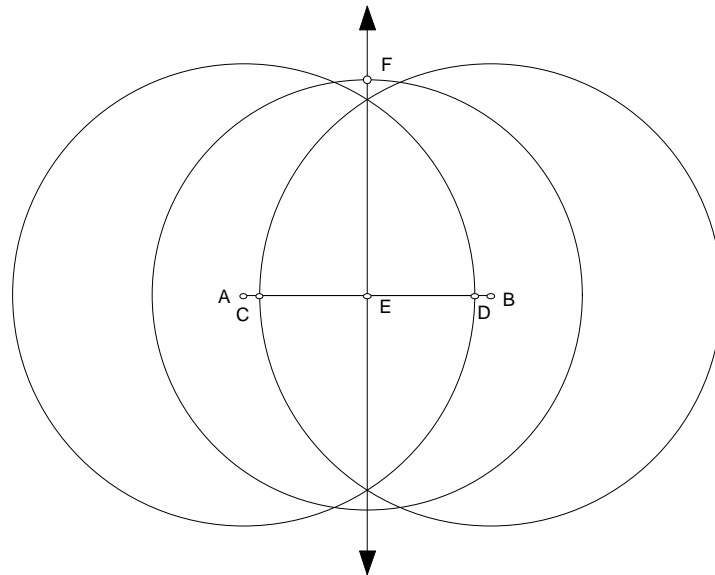
Fig 1

Fig 2

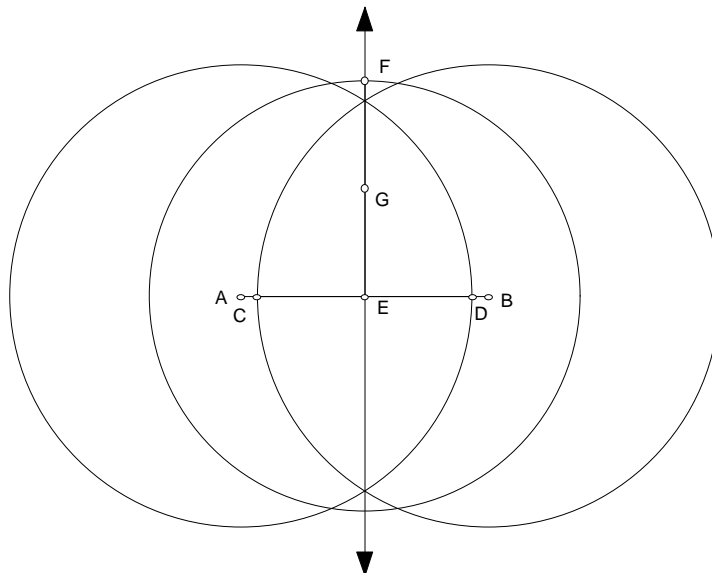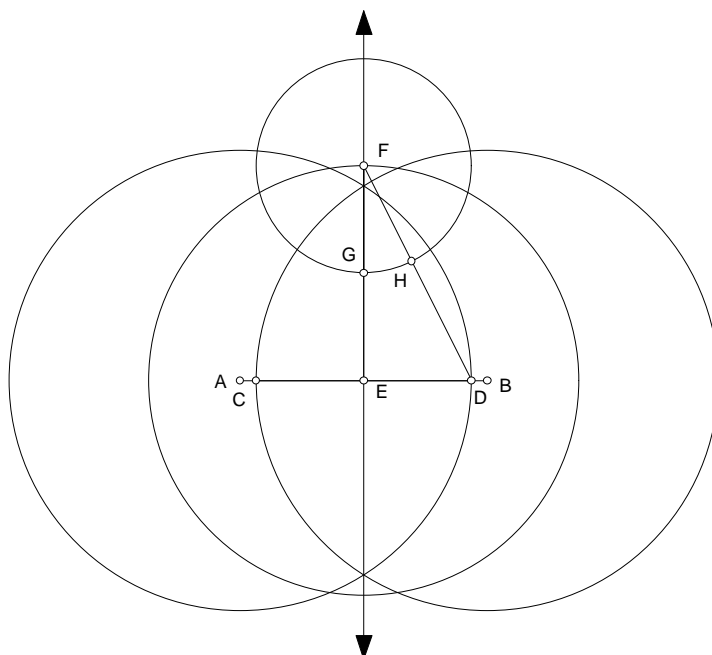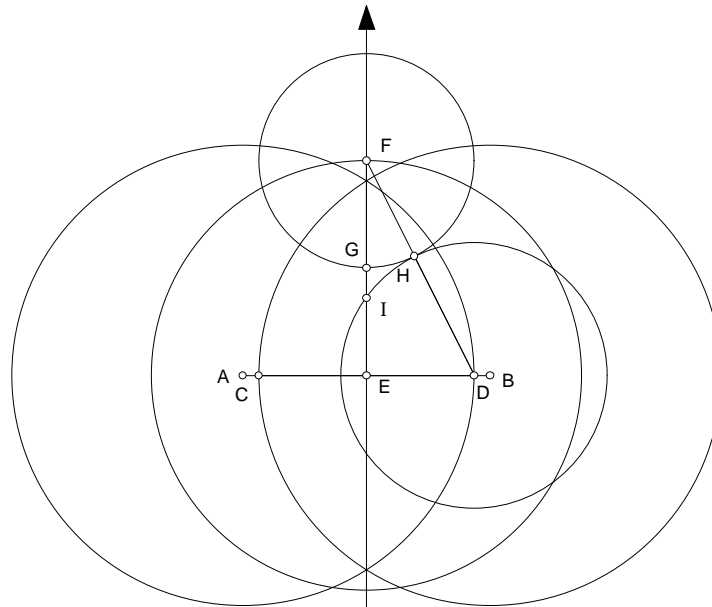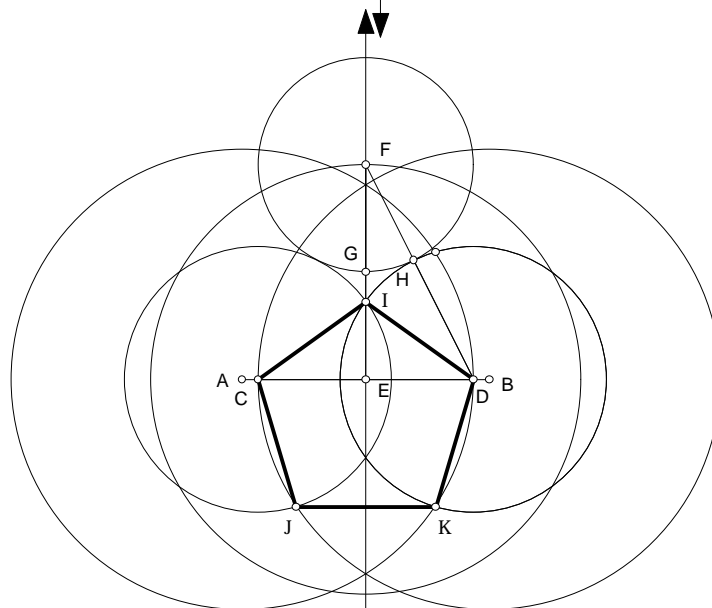Mathematics for all post-16 – A project funded by the Nuffield Foundation

Fig 3

Fig 4

Fig 5

Fig 6

Fig 7

**Regular
Pentagon
CIDKJ**

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