Perpendicular Bisection Of A Straight Line

A perpendicular bisection of a straight line is a geometric construct intended to create a 90° angle using a compass.
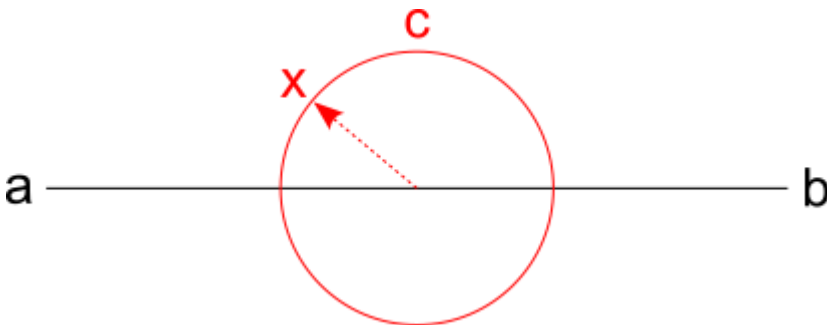
Method

- Draw the line to be bisected
- Draw the centre circle
- Draw second circle
- Draw third circle
- Bisect line

Draw Line To Be Bisected

The bisection will be of a straight line *a-b*. The length of this line is unimportant and is used simply for explaining the construct. The line should be drawn using a ruler.

Drawing Centre Circle

Around the middle of line *a-b*, circle *c* is drawn. Radius *x* is of no particular size, but making the diameter of the circle approximately ⅓ of the length of line *a-b* makes the bisection easier to construct.
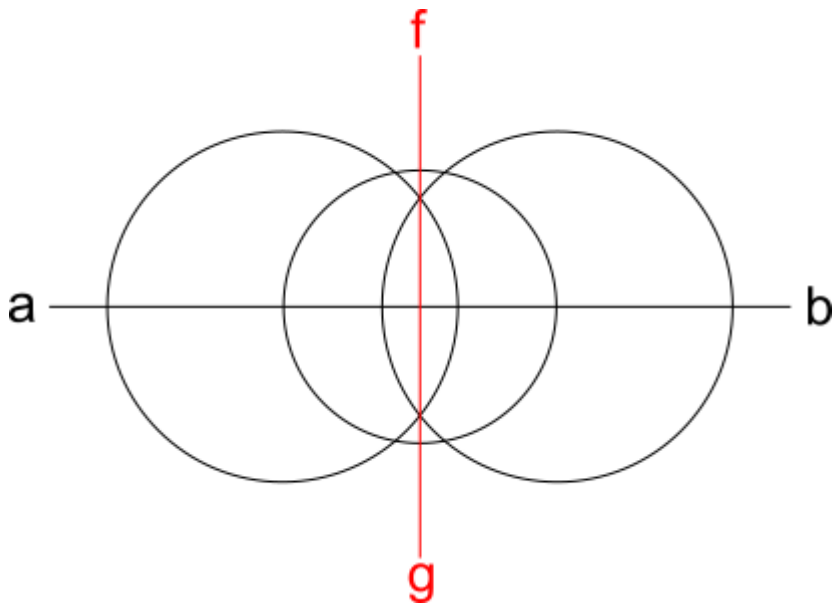
Drawing Second Circle
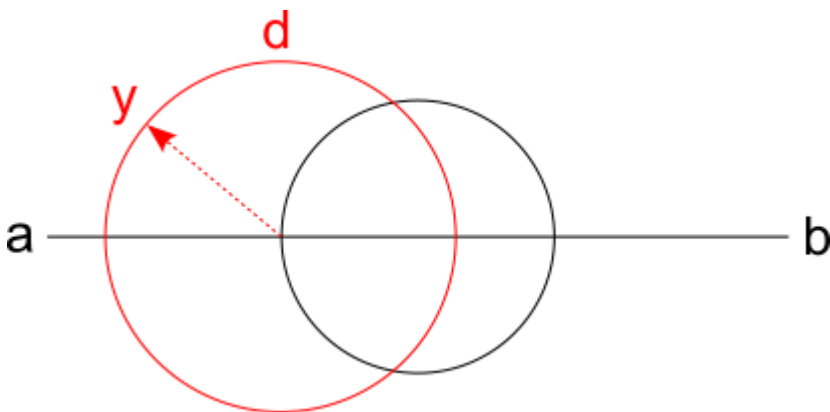
Where circle *c* intersects line *a-b*, place the point of the compass and draw a second circle *d* with a radius *y* larger than that of circle *c*.

Draw Third Circle
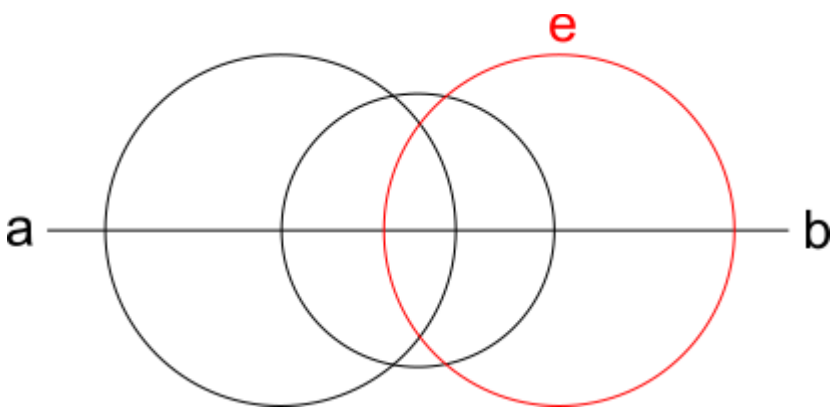
On the opposite side of circle *c* where it intersects line *a-b*, place the point of the compass and draw a third circle with the same radius *y* as circle *d*.

Bisect Line

a ———————————————— b

f

g

Draw a straight line using a ruler that touches the intersecting points of circles *d* and *e*. The bisection of line *a-b* by line *f-g* will be at 90°.