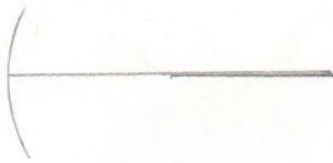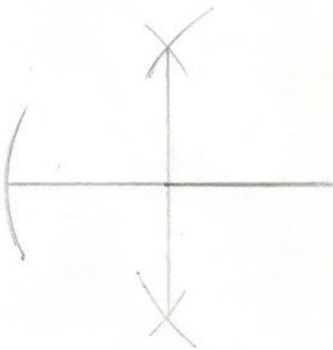Draw a line of any length
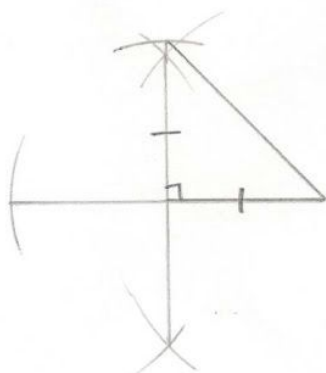This will be your 'unit' length.

Using a compass, double the
length of the line.

Construct a perpendicular
bisector

Using a compass, make the
perpendicular bisector equal
to your 'unit' length.
Then join the two
lines to make a triangle.

Double the length of the
hypotenuse of the first
triangle. Construct a
perpendicular bisector.
Make it equal to
your 'unit' length.
Join.

Repeat.