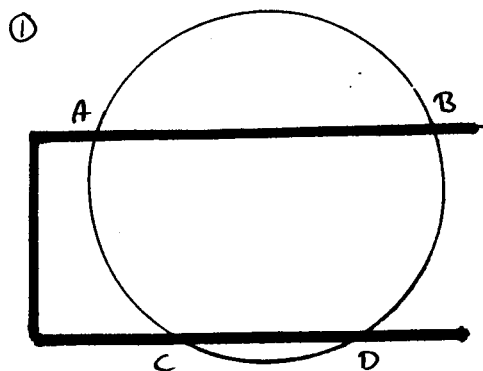
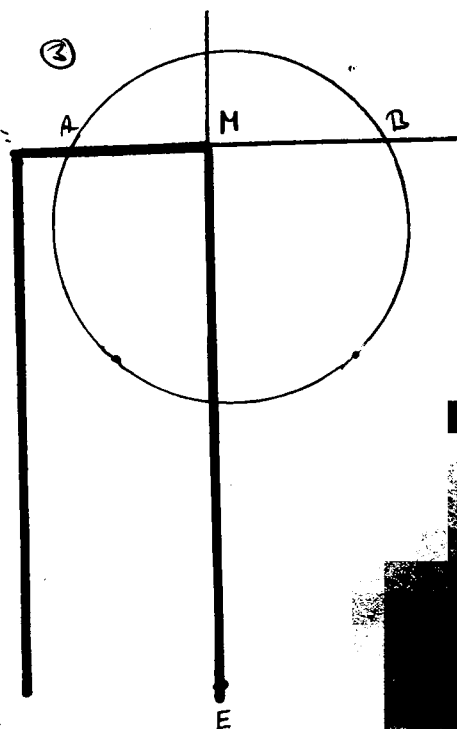
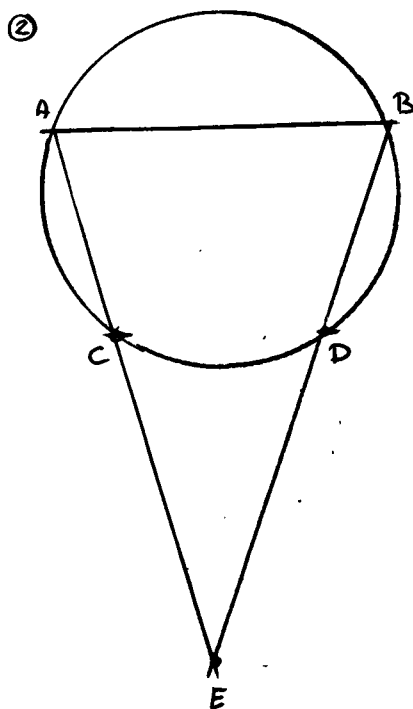


1. Solution. The following sequence of pictures provides one possible solution.



Position the ruler so that
AC and BD are not parallel.



The center of the circle lies on the straight line passing through M and E.

Repeating this process with a different initial positioning of the ruler on the circle results in another straight line that passes through the center of the circle and is (in general) different from the first line. The intersection of these two lines is the sought center.

2. Solution.

$$m = 9$$

$$16050 \times 3 = 50160$$