

Fig. 5–13. Division of a line into equal segments by geometric construction.

30 scale. A line in Fig. 5–12D is measured to be 10.6″ long. Note that a 30 scale was used for this measurement.

5–8 MATHEMATICAL CONSTRUCTION

The use of scales and principles of geometric construction can be combined to provide graphical solutions to mathematical problems to a reasonable degree of accuracy. This is the principle employed in nomography, which will be covered in Article 15–35. This form of problem solution is especially applicable to problems of a repetitive nature where the variable remains constant, thus enabling graphical readings to be taken from the same drawing.

The basis of most construction of this type begins with the division of a line into a given number of parts, as illustrated in Fig. 5–13.

Step 1. Line *AB* is to be divided into seven units by graphical methods. A line is drawn at a convenient angle through point *A*. This line is divided into seven equal segments using dividers or a scale having some convenient number of divisions. The seventh division mark is connected to point *B* with a construction line.

Step 2. Lines are drawn from each division mark parallel to the construction line through point *B*. These lines intersect line *AB*, dividing it into seven equal segments.