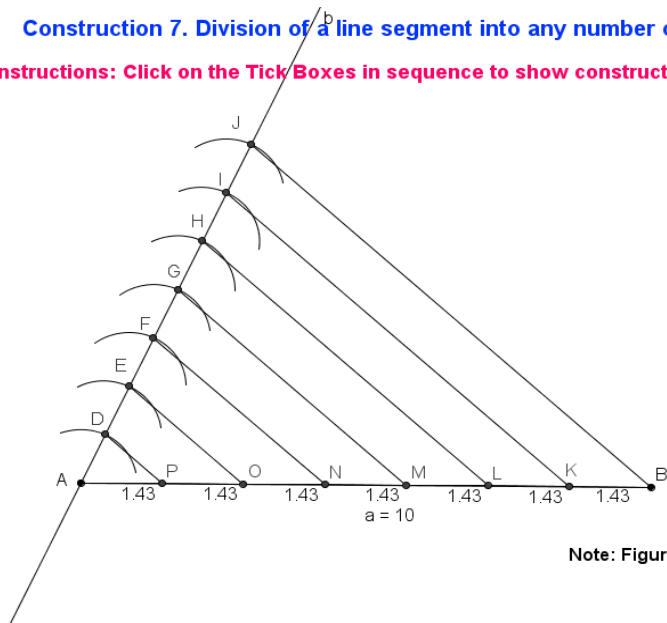# Student Activity Construction 7

Use in connection with the interactive file, 'Construction 7', on the Student's CD.

Construction 7: Division of a line segment into any number of equal segments, without measuring it.

Construction 7. Division of a line segment into any number of equal segments, without measuring it. Note n =7 in this example.

Instructions: Click on the Tick Boxes in sequence to show construction steps

☑ **A** Draw a line segment [AB].

☑ **B** Through A draw a line at an acute angle to [AB].

☑ **C** On this line use circle arcs of the same radius to mark off 7 line segments of the same length [AD], [DE],[EF],[FG],[GH],[HI],and [IJ].

☑ **D** Join J to B.

☑ **E** Through I, H, G, F, E and D draw line segments parallel to meet [AB] at K, L, M, N, O,and P. Use set square and straight edge to do this.

☑ **F** Now [AP]=[PO]=[ON]=[NM]=[ML]=[LK]=[KB]=1.43

Note: Figures correct to 2 decimal places.

1. Move the point B on the interactive file to make |AB| = 10. Write down the lengths of |AP|, |PO|,|ON|,|NM|, |ML|, |LK| and |KB|

   |AP| = _____ |PO| = _____

   |ON| = _____ |NM| = _____

   |ML| = _____ |LK| = _____

   |KB| = _____

2. Move the point B on the interactive file to make |AB| =7.98. Write down the lengths of |AP|, |PO|,|ON|,|NM|, |ML|, |LK| and |KB|

   |AP| = _____ |PO| = _____

   |ON| = _____ |NM| = _____

|ML| = _____ |LK| = _____

|KB| = _____

What conclusion can you draw from the answers to questions 1 and 2 above?

Conclusion _____

3. Divide the line segment [AB] into 7 equal parts without measuring it.

A   B

4. Divide the line segment [AB] into 5 equal parts without measuring it.

A   B