

Objectives:

The student will be able to measure the distance between points.

The student will be able to apply the segment addition postulate to measure distance.

Line Segment (segment):

a piece of a line \rightarrow has endpoints
* can be measured

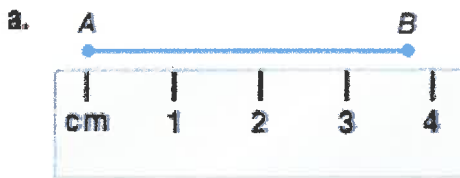
the measure of \overline{AB} is written as AB



\overline{AB} or \overline{BA}

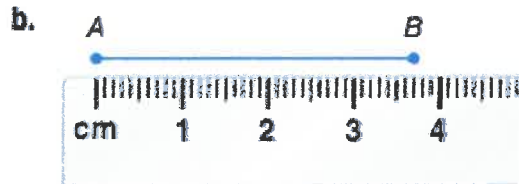
ex) $AB = 5$ in

1. Find the length of \overline{AB} using each ruler.

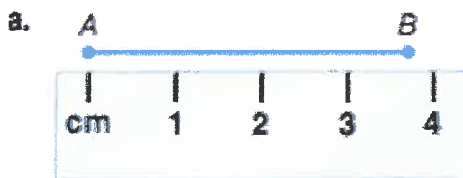


less than 4 but close

$$\overline{AB} \approx 4 \text{ cm}$$

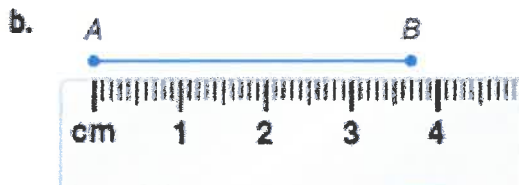


$$\overline{AB} \approx 3.7 \text{ cm} = 3 \frac{7}{10} \text{ cm}$$



* split into fourths

$$CD = 1 \frac{1}{4}$$

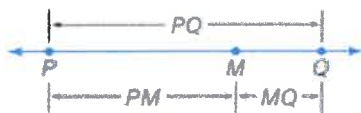


* split into sixteenths

$$CD = 1 \frac{4}{16}$$

$$= 1 \frac{1}{4}$$

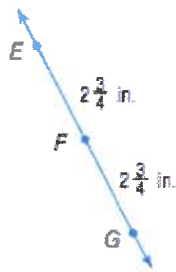
Segment Addition Postulate:



$$PM + MQ = PQ$$

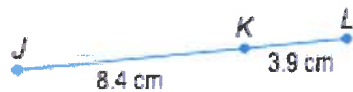
2. Find the measurement of the following line segments:

a. EG



$$\begin{aligned} EG &= EF + FG \\ EG &= 2\frac{3}{4} + 2\frac{3}{4} \\ &= 4\frac{6}{4} \\ &= 5\frac{2}{4} \\ &= 5\frac{1}{2} \text{ in} \end{aligned}$$

b. JL



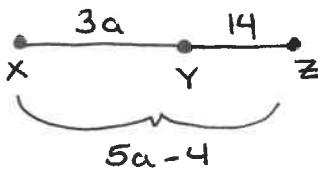
$$\begin{aligned} JL &= JK + KL \\ &= 8.4 + 3.9 \\ &= 12.3 \text{ cm} \end{aligned}$$

c. AC



$$\begin{aligned} AC &= AB + BC \\ 13.2 &= AB + 5.8 \\ 7.4 \text{ m} &= AB \end{aligned}$$

3. Find the value of a and XY if Y is between X and Z , $XY = 3a$, $XZ = 5a - 4$, and $YZ = 14$

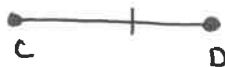


$$\begin{aligned} 5a - 4 &= 3a + 14 \\ 2a &= 18 \\ a &= 9 \end{aligned}$$

$$\begin{aligned} XY &= 3a \\ XY &= 27 \end{aligned}$$

Congruent Segments:

segment that have the same measure



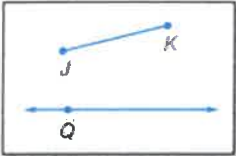
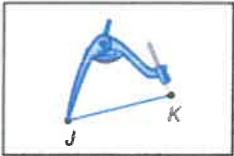
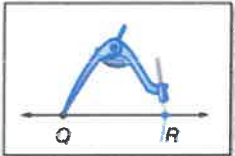
$$\overline{AB} \cong \overline{CD}$$

*dashes
and
 symbols

Constructions

methods of creating figures by using tools such as ruler and protractor

Construction Copy a Segment

<p>Step 1 Draw a segment \overline{JK}. Elsewhere on your paper, draw a line and a point on the line. Label the point Q.</p> 	<p>Step 2 Place the compass at point J and adjust the compass setting so that the pencil is at point K.</p> 	<p>Step 3 Using that setting, place the compass point at Q and draw an arc that intersects the line. Label the point of intersection R.</p> 
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$$\overline{QR} \cong \overline{JK}$$