Measuring Segments

Today I Can

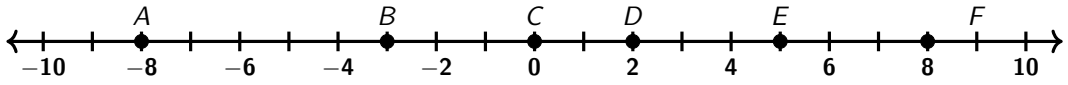
1. Find and compare the lengths of segments.

Distance on a Number Line

To find the distance between two points A and B on a number line, subtract their coordinates and take the absolute value.

$$|A - B|$$

Example 1. Given the number line below, find each distance.



(a) AC (b) BE (c) CF

Segment Addition Postulate

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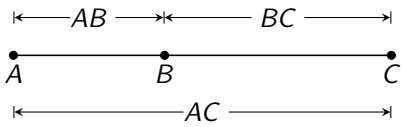
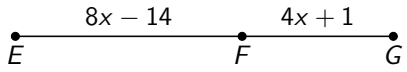
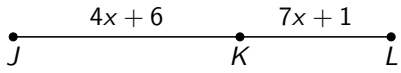
If 3 points A, B, and C are collinear and B is between A and C, then $AB + BC = AC$.



Example 2. If $EG = 59$, what are EF and FG?



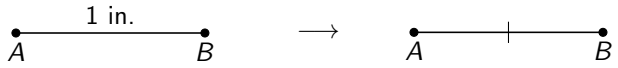
Example 3. If $JL = 120$, what are JK and KL?

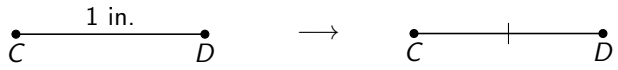


Congruent

Equal in measure

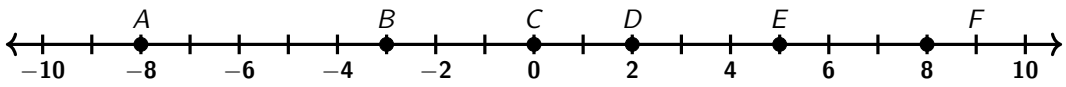
Segments that have the same length are **congruent**. The symbol for congruent is $\cong$.





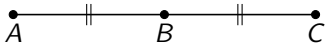
$AB = CD$ $\qquad\qquad$ $AB \cong CD$

Example 4. Are $\overline{AC}$ and $\overline{BE}$ congruent?

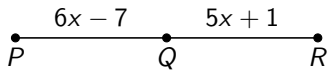


Midpoint

A point that divides a segment into 2 congruent segments. In the picture below, B is the midpoint of $\overline{AC}$.



Example 5. Q is the midpoint of PR. What are PQ, QR, and PR?



Example 6. U is the midpoint of TV. What are TU, UV, and TV?