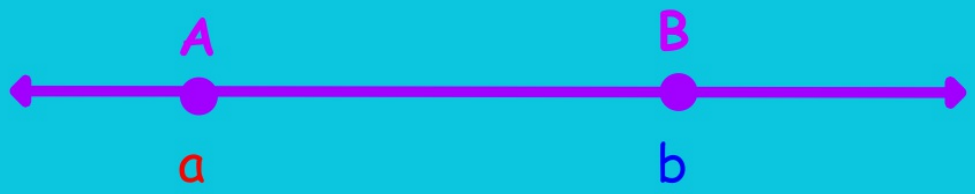
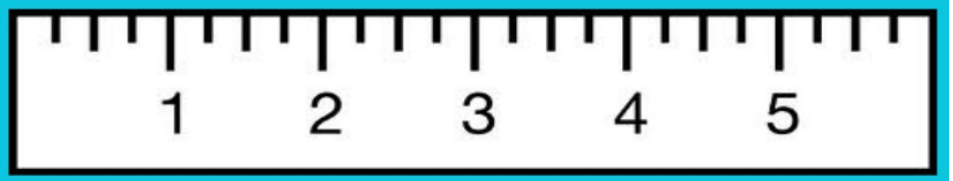
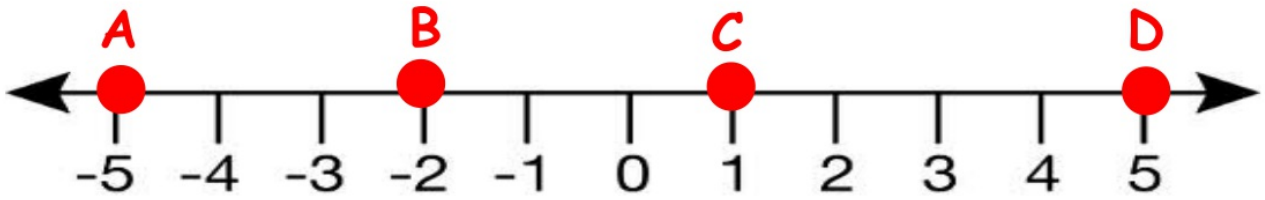
1-5 Measuring Segments

Ruler Postulate: The pts. of a line can be put into 1 to 1 correspondence with real numbers so that the distance between 2 pts is the absolute value of the difference of the corresponding #'s.



Length of $\overline{AB}$ = | a - b|





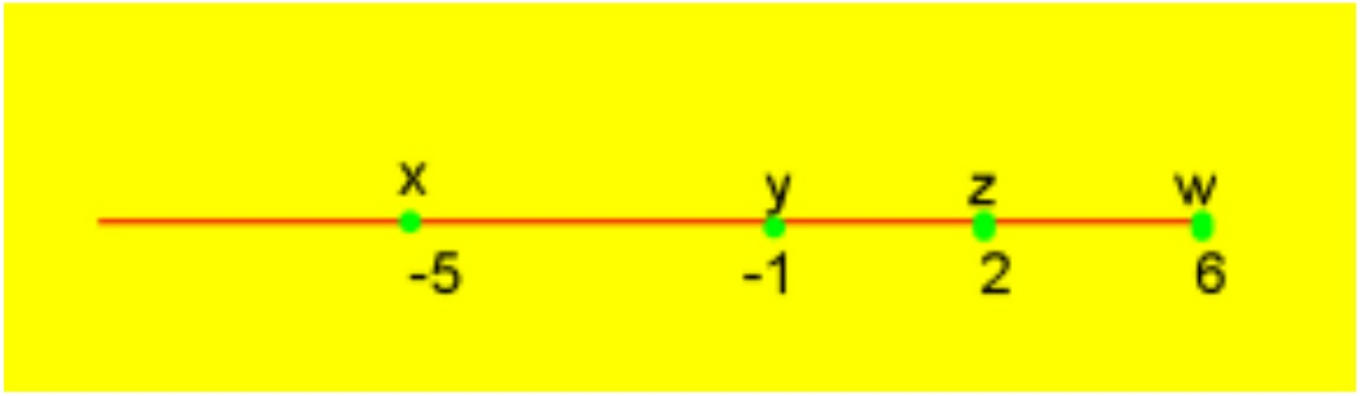
$\overline{AB}$ =

$\overline{BC}$ =

Congruent ($\cong$) Segments - *Segments with the same length*

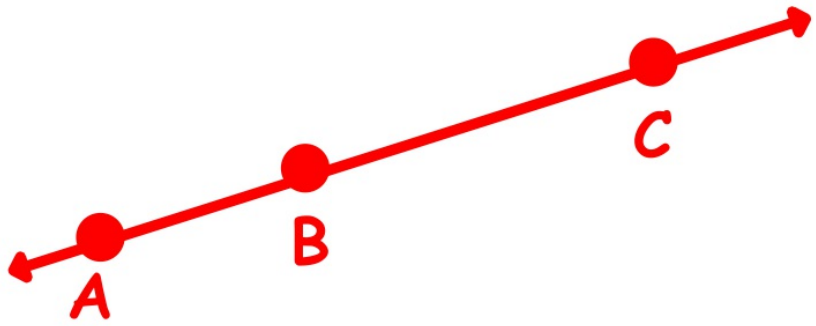
Example

Identify a pair of congruent segments .



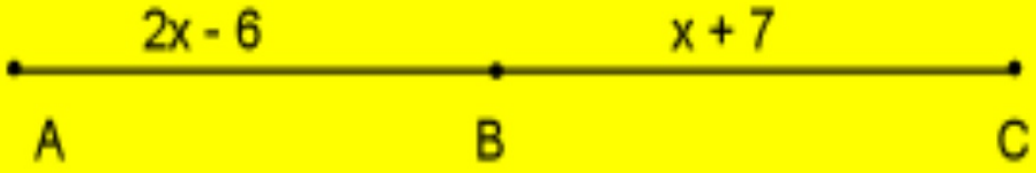
Segment Addition Postulate

If three pts A, B, and C are collinear and B is between A and C, then $\overline{AB} + \overline{BC} = \overline{AC}$



Example

If AC = 25, Find the value of x



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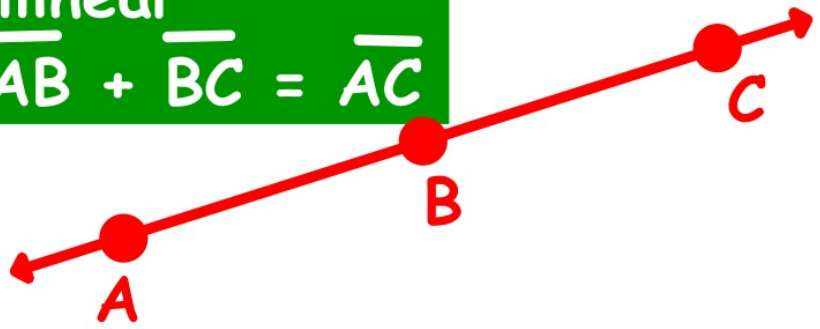
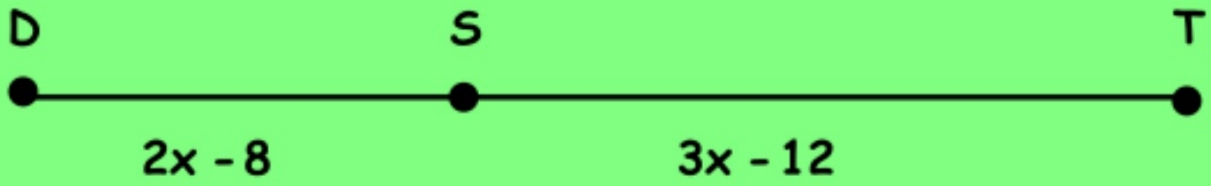


Midpoint - *divides into two congruent segments*

If B is the *midpoint* of $\overline{AC}$ and $\overline{AB} = 5x + 9$ and $\overline{BC} = 8x - 36$, find $\overline{AB}$, $\overline{BC}$ and $\overline{AC}$.

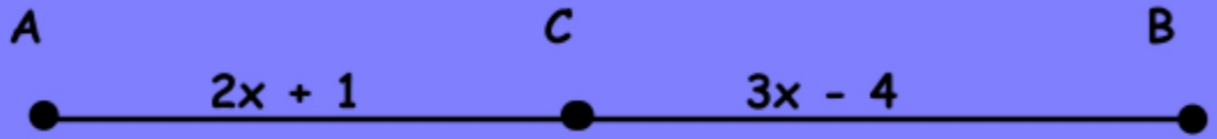
More Examples:

If DT = 60, find the value of x. Then find DS and ST.



IF EG = 100, find the value of x. Then find EF and FG.

If C is the midpoint of AB. Find AC, CB, and AB.



Measuring Segments

Lesson Objectives:

I can . . .

- **identify congruent segments**
- **use the segment addition postulate to algebraically solve for unknown segment lengths**
- **use the definition of midpoint to algebraically solve for unknown segment lengths**

Assignment: page 33: 2-22 even, 29-35 all