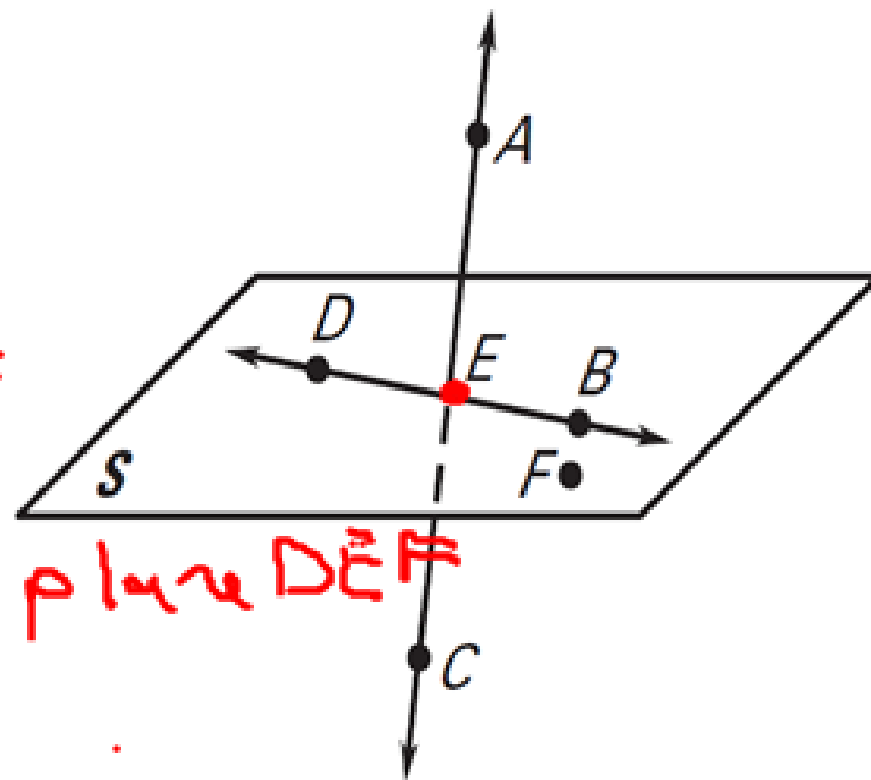


Please put this warm-up on your assignment and clearly label it "Warm-Up".

Use this figure for Exercises 1-4.

1. Give two other names for  $\overleftrightarrow{AE}$ .  
 $\overleftrightarrow{EA}, \overleftrightarrow{EC}, \overleftrightarrow{AC}$
2. Give another name for plane  $S$ .  
plane  $DBF$ , plane  $EBF$
3. Name three collinear points.  
 $A, E, C$  or  $D, E, B$
4. Name the intersection of  $AC$  and plane  $S$ .

$E$



Today's Topic:

Segments, Ruler Postulate,  
Segment Addition Postulate,  
Congruence.

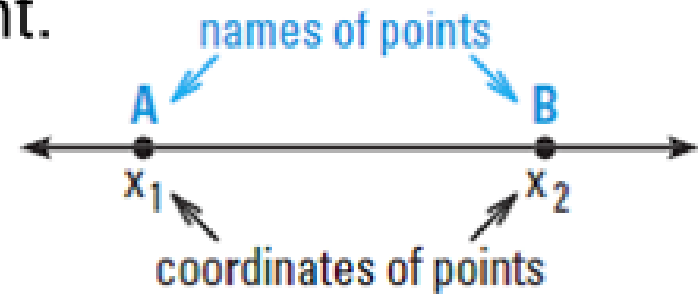

$$\text{—} + \text{—} = ?$$

Postulate - a rule that is accepted without proof

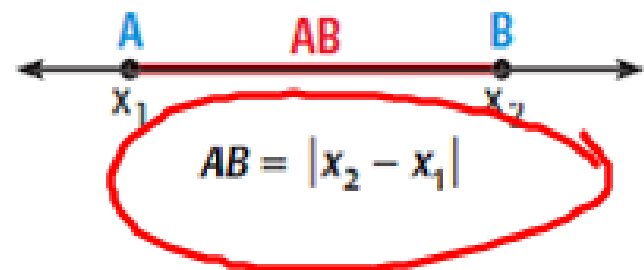


Ruler Postulate

The points on a line can be matched one to one with the real numbers. The real number that corresponds to a point is the coordinate of the point.



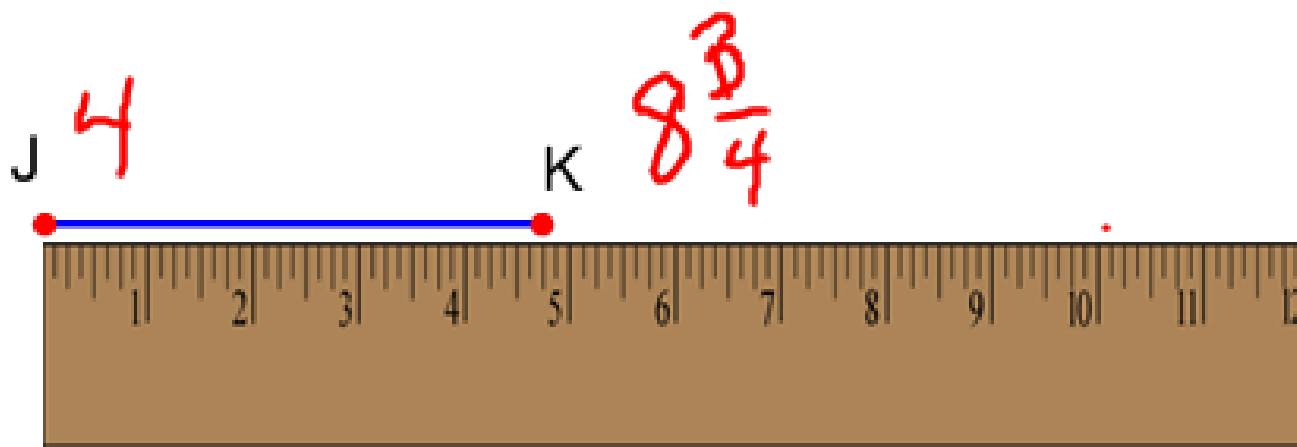
The distance between points A and B, written AB, is the absolute value of the difference of the coordinates of A and B.



Apply the Ruler Postulate

- aka - measure length to the nearest one eighth

Find JK.

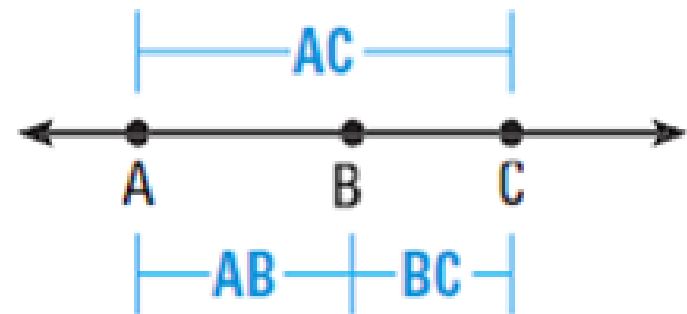


$$JK = \left| 8\frac{3}{4} - 4 \right|$$
$$= 4\frac{3}{4}''$$

## Segment Addition Postulate

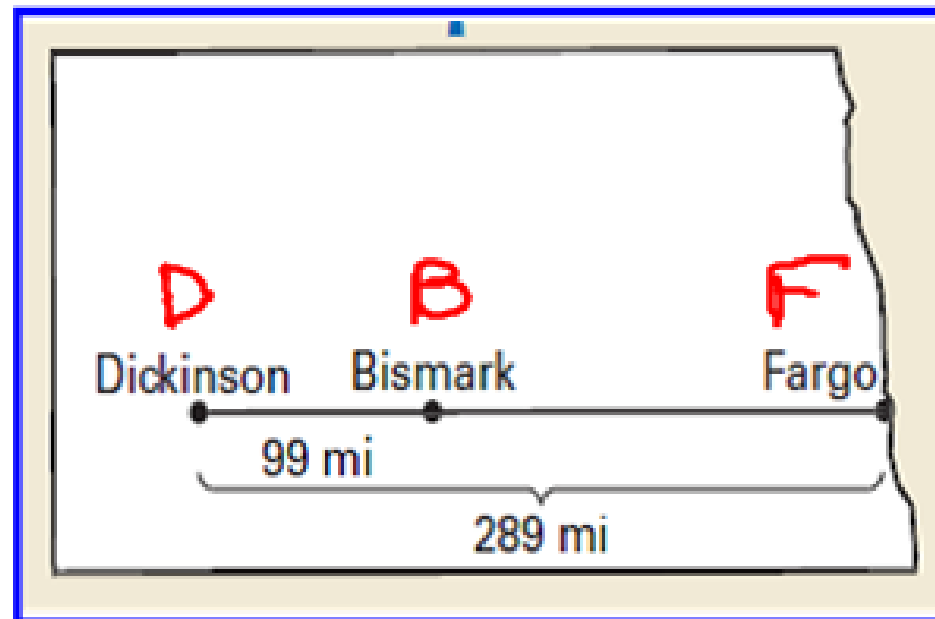
If B is between A and C, then  $AB + BC = AC$ .

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



Note: AB, BC, and AC represent distances!

The cities shown on the map lie approximately in a straight line. Use the given distances to find the distance from Bismark to Fargo.



Apply the Segment Addition Postulate

$$DB + BF = DF$$

$$\begin{array}{r} 99 + BF = 289 \\ -99 \\ \hline \end{array}$$

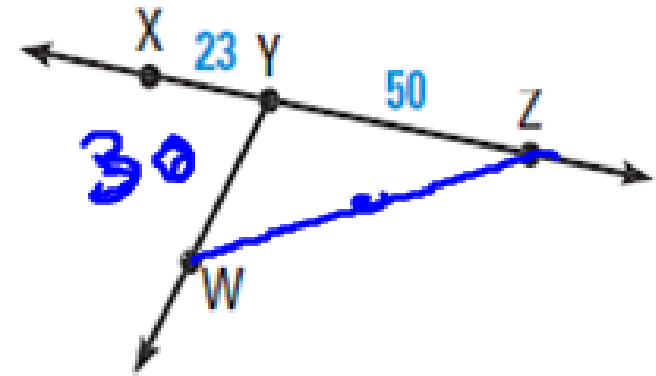
$$BF = 190 \text{ miles.}$$

1. Use the Segment Addition Postulate to find XZ.

$$XY + YZ = XZ$$

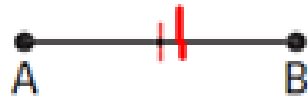
$$23 + 50 = XZ$$

$$73 = XZ$$



2. In the diagram,  $WY = 30$ . Can you use the Segment Addition Postulate to find the distance between points W and Z? Explain.

congruent segments - segments that have the same length



**Lengths are equal.**

$$AB = CD$$



“is equal to”

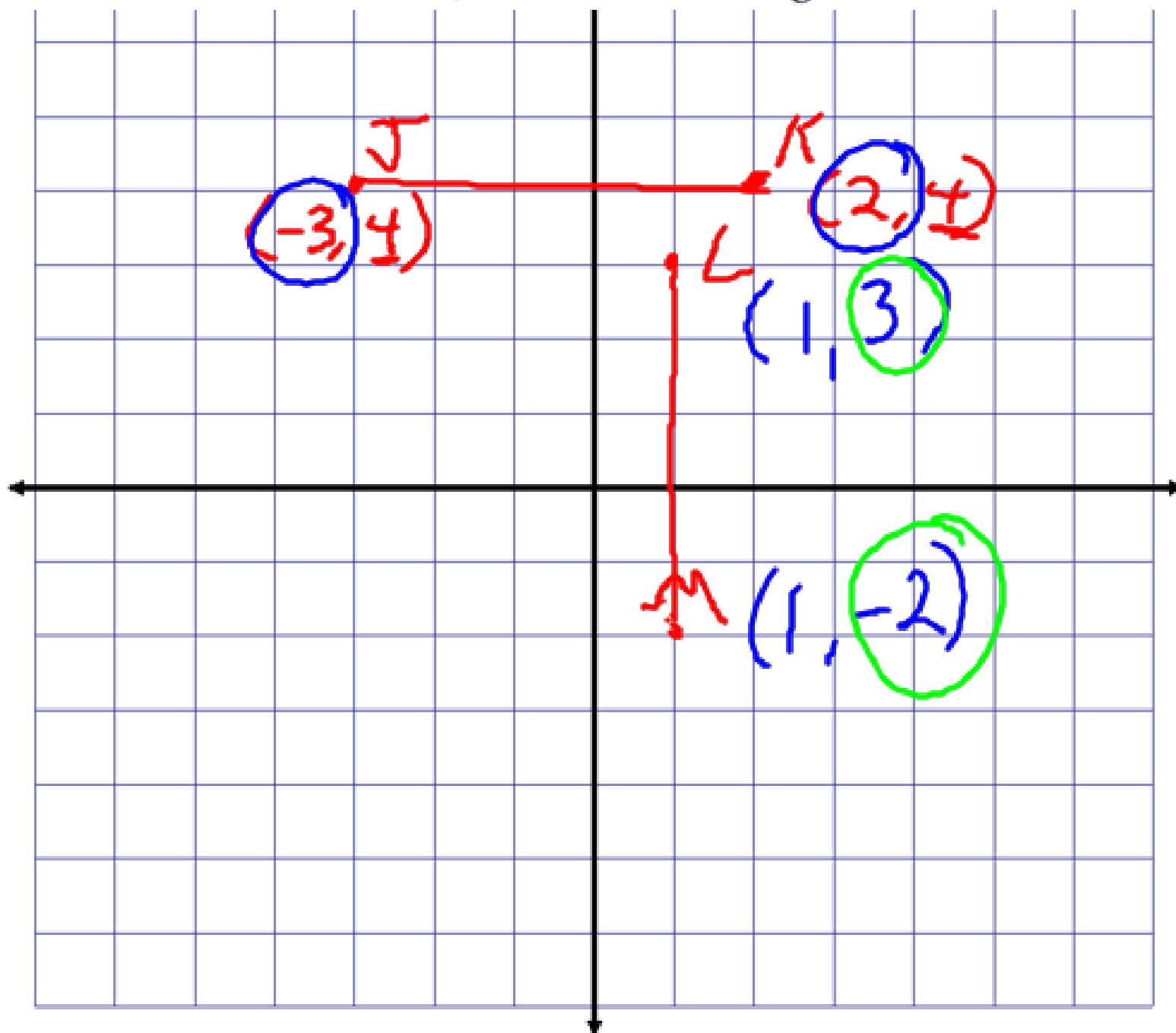
**Segments are congruent.**

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



“is congruent to”

Plot  $J(-3, 4)$ ,  $K(2, 4)$ ,  $L(1, 3)$ , and  $M(1, -2)$  in a coordinate plane. Then determine whether  $\overline{JK}$  and  $\overline{LM}$  are congruent.



Homework:

p 12-14  
#'s 4-26E,  
32, 42-45



+



= ?

