

## 1.2 Use Segments and Congruence

\*postulate or axiom - A rule that is accepted without proof, there is an agreement that it "just makes sense"

\*We will learn later that a proven statement is *a theorem*

Pg. 926

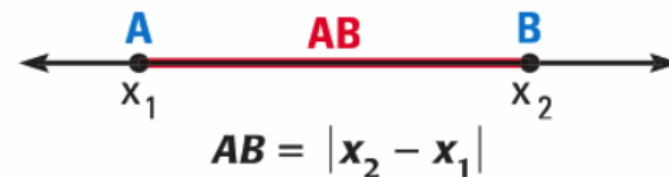
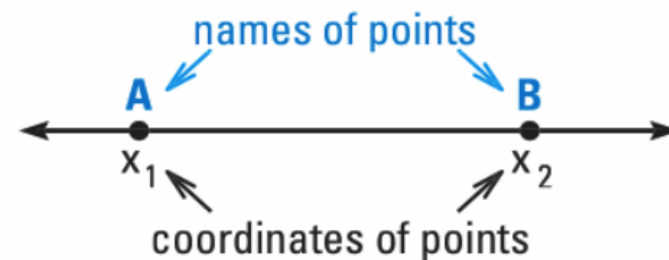
## POSTULATE

## For Your Notebook

### POSTULATE 1 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 as  $AB$ , is the absolute value of the difference of the coordinates of  $A$  and  $B$ .



**EXAMPLE 1**    **Apply the Ruler Postulate**

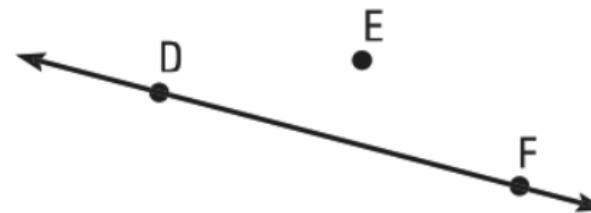
Measure the length of  $\overline{ST}$  to the nearest tenth of a centimeter.



**ADDING SEGMENT LENGTHS** When three points are collinear, you can say that one point is **between** the other two.



**Point *B* is between points *A* and *C*.**

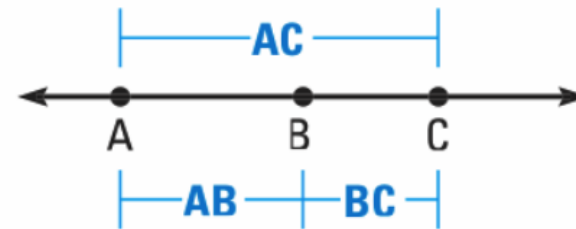


**Point *E* is not between points *D* and *F*.**

**POSTULATE***For Your Notebook***POSTULATE 2 Segment Addition Postulate**

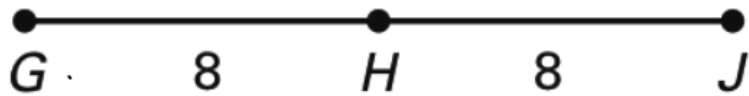
If  $B$  is between  $A$  and  $C$ , then  $AB + BC = AC$ .

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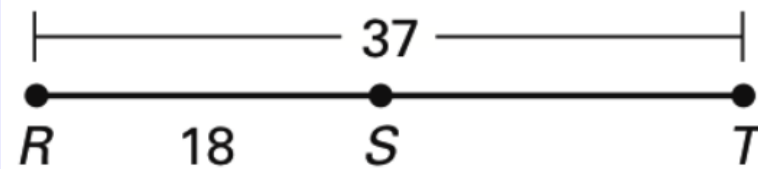


## Find the indicated length.

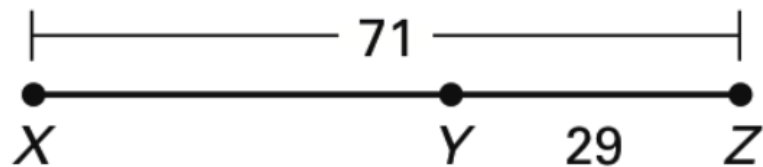
1. Find  $GJ$ .



2. Find  $ST$ .



3. Find  $XY$ .



4. Find  $NQ$ .



**EXAMPLE 2****Apply the Segment Addition Postulate**

**MAPS** The cities shown on the map lie approximately in a straight line. Use the given distances to find the distance from Lubbock, Texas, to St. Louis, Missouri.



**\*congruent segments-** Line segments that have the same length



**Lengths are equal.**

$$AB = CD$$



“is equal to”



**Segments are congruent.**

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



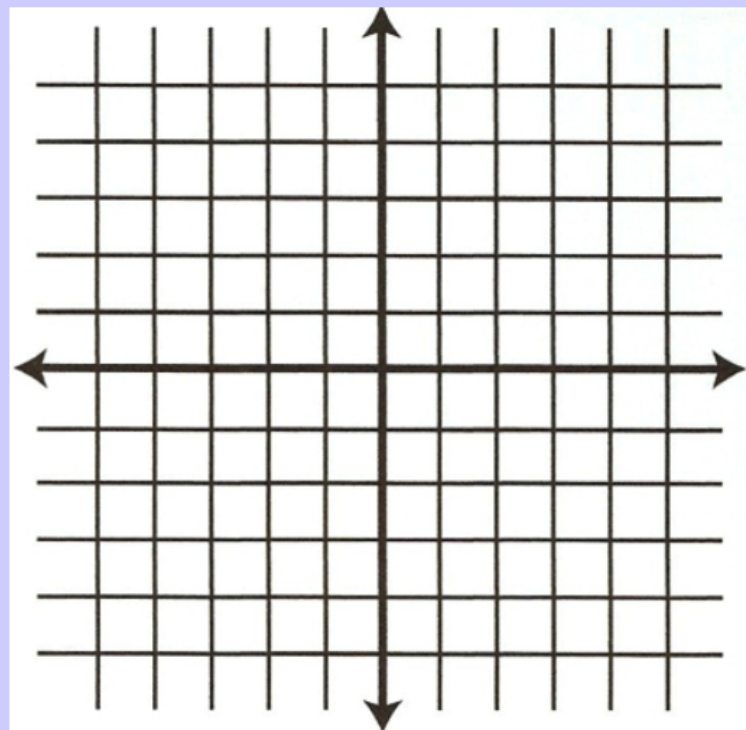
“is congruent to”

\*We use "tick" marks to show congruence.



**EXAMPLE 4** Compare segments for congruence

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.



**Assignment:**

p. 12 (3-31 all, except 20; 37-45 all)