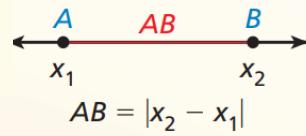
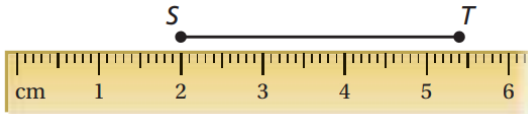


Definition:

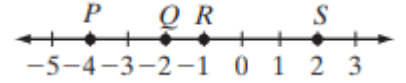
The *length* or *measure of a line segment* is the distance between its endpoints.



Find the length of \overline{ST} .



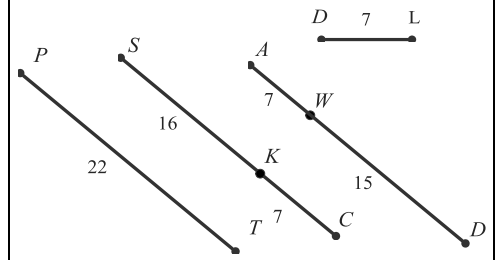
Find RS , SR , and RP



Equality versus Congruence: Use the figures to make correct statements:

Numbers or Values use the “is equal to” symbol. “ $=$ ”

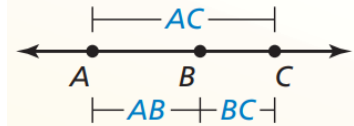
Figures or Shapes use the “is congruent to” symbol. “ \cong ”



The Segment Addition Postulate* for Collinear Points:

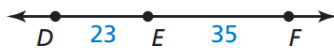
* A postulate is geometric statement that is accepted without proof.

If B is between A and C then

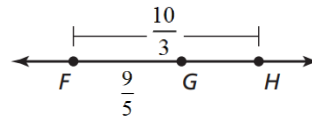


Examples:

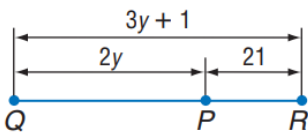
1. Find DF .



2. Find GH .



3. Find y , QP , PR , and QR



4. If $PT = 18$ and $QS = 4$, find PQ , PS , and QT .



5. Points A , B , and C are collinear. B is in between A and C . AC is 75. AB is twice BC . Find AB , BC and AC . Be sure your answer makes sense. Draw the figure.

$$AB = \underline{\hspace{2cm}}$$

$$BC = \underline{\hspace{2cm}}$$

$$AC = \underline{\hspace{2cm}}$$

6. Points A , B , and C are collinear. B is in between A and C . $AC = 200$. BC is 12 more than three times AB . Find AB , BC and AC . Be sure your answer makes sense. Draw the figure.

$$AB = \underline{\hspace{2cm}}$$

$$BC = \underline{\hspace{2cm}}$$

$$AC = \underline{\hspace{2cm}}$$

Do you get it? Circle the statements that use the appropriate symbol. Cross out the incorrect statements. Get your work checked!

$$\overline{SK} \cong \overline{WD}$$

$$\overline{SK} = 10$$

$$\overline{KC} = \overline{AW}$$

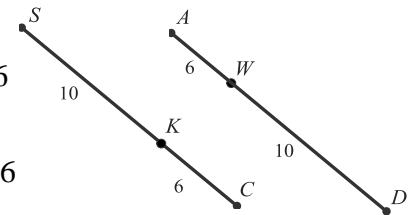
$$\overline{SK} + \overline{KC} \cong 16$$

$$AW = CK$$

$$WD \cong 10$$

$$KC = WA$$

$$SK + KC = 16$$



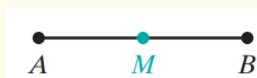
Definition: Two segments are congruent if and only if they have the same length (or measure).

If $\overline{AB} \cong \overline{CD}$ then _____.

If $PQ = RS$ then _____.

This may seem obvious, but this detail will be important in later chapters.

Definition: A point is a midpoint if and only if it divides a segment into two congruent segments.



If M is the midpoint of \overline{AB} then _____ \cong _____.

You can also conclude that $AM = \underline{\hspace{1cm}}$, $AM = \frac{1}{2}AB$,
 $MB = \underline{\hspace{1cm}}$, $AB = 2AM$ and $AB = \underline{\hspace{1cm}}$.