

**LESSON**  
**1.2****Study Guide**

For use with pages 9–14

**GOAL** Use segment postulates to identify congruent segments.**Vocabulary**

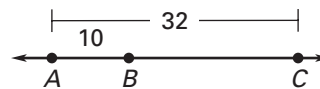
In Geometry, a rule that is accepted without proof is called a **postulate** or **axiom**.

**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  $B$ .

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

**Postulate 2 Segment Addition Postulate:** If  $B$  is between  $A$  and  $C$ , then  $AB + BC = AC$ . If  $AB + BC = AC$ , then  $B$  is between  $A$  and  $C$ .

Line segments that have the same length are called **congruent segments**.

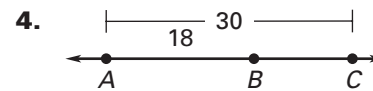
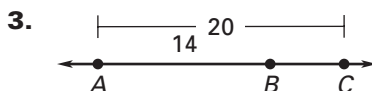
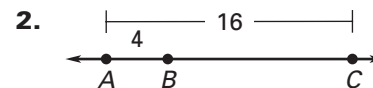
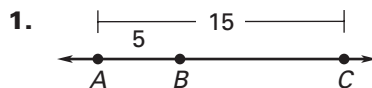
**EXAMPLE 1** Find a lengthUse the diagram to find  $BC$ .**Solution**

Use the Segment Addition Postulate to write an equation. Then solve the equation to find  $BC$ .

$$AC = AB + BC \quad \text{Segment Addition Postulate}$$

$$32 = 10 + BC \quad \text{Substitute 32 for } AC \text{ and 10 for } AB.$$

$$22 = BC \quad \text{Subtract 10 from each side.}$$

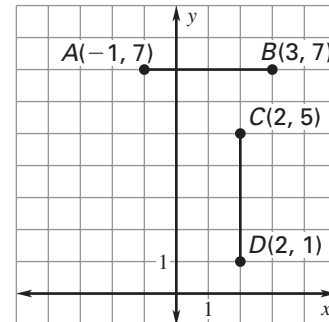
**Exercises for Example 1**Use the diagram to find  $BC$ .

LESSON  
1.2**Study Guide** *continued*  
For use with pages 9–14**EXAMPLE 2** Compare segments for congruenceUse the diagram to determine whether  $\overline{AB}$  and  $\overline{CD}$  are congruent.**Solution**To find the length of a horizontal segment find the absolute value of the difference of the  $x$ -coordinates of the endpoints.

$$AB = |-1 - 3| = |-4| = 4 \text{ Use Ruler Postulate.}$$

To find the length of a vertical segment, find the absolute value of the difference of the  $y$ -coordinates of the endpoints.

$$CD = |5 - 1| = 4 \text{ Use Ruler Postulate.}$$

 $\overline{AB}$  and  $\overline{CD}$  have the same length. So,  $\overline{AB} \cong \overline{CD}$ .**Exercises for Example 2**Use the diagram to determine whether  $\overline{AB}$  and  $\overline{CD}$  are congruent.