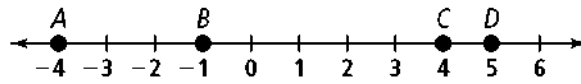


# Handout 1.3: Points, Lines, and Planes

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Per: \_\_\_\_\_

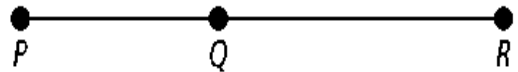
In Exercises 1–6, use the figure below. Find the length of each segment.



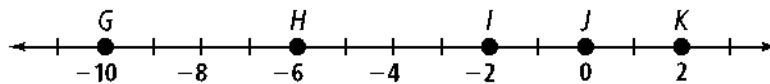
- |                    |                    |                    |
|--------------------|--------------------|--------------------|
| 1. $\overline{AB}$ | 2. $\overline{BC}$ | 3. $\overline{AC}$ |
| 4. $\overline{AD}$ | 5. $\overline{BD}$ | 6. $\overline{CD}$ |

For Exercises 7–11, use the figure at the right.

7. If  $PQ = 7$  and  $QR = 10$ , then  $PR = \square$ .
8. If  $PQ = 20$  and  $QR = 22$ , then  $PR = \square$ .
9. If  $PR = 25$  and  $PQ = 12$ , then  $QR = \square$ .
10. If  $PR = 19$  and  $QR = 12$ , then  $PQ = \square$ .
11. If  $PR = 10$  and  $PQ = 4$ , then  $QR = \square$ .

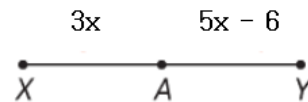


Use the number line below for Exercises 12–16. Give the length of each segment, then tell whether the segments are congruent.



- |  |   |   |                     |
|--|---|---|---------------------|
| 12. $\overline{GH}$ and $\overline{HI}$<br>and $\overline{JK}$ | 13. $\overline{GH}$ and $\overline{IK}$ | 14. $\overline{HJ}$ and $\overline{IK}$ | 15. $\overline{IJ}$ |
|--|---|---|---------------------|

16. **Algebra** A is the midpoint of  $\overline{XY}$ .
  - a. Find  $XA$ .
  - b. Find  $AY$  and  $XY$ .



**Algebra** For Exercises 20–22, use the figure below. Find the value of  $PT$ .

17.  $PT = 5x + 3$  and  $TQ = 7x - 9$

18.  $PT = 4x - 6$  and  $TQ = 3x + 4$



19.  $PT = 7x - 24$  and  $TQ = 6x - 2$

**On a number line, the coordinates of  $P$ ,  $Q$ ,  $R$ , and  $S$  are  $-12$ ,  $-5$ ,  $0$ , and  $7$ , respectively.**

**22.** Draw a sketch of this number line. Use this sketch to answer Exercises 23–26.

**23.** Which line segment is the shortest?

**24.** Which line segment is the longest?

**25.** Which line segments are congruent?

**26.** What is the coordinate of the midpoint of  $\overline{PR}$  ?

**27.** You plan to drive north from city A to town B and then continue north to city C. The distance between city A and town B is 39 mi, and the distance between town B and city C is 99 mi.

**a.** Assuming you follow a straight driving path, after how many miles of driving will you reach the midpoint between city A and city C?

**b.** If you drive an average of 46 mi/h, how long will it take you to drive from city A to city C?