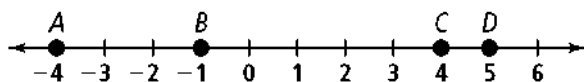


Name _____

1-3 Measuring Segments

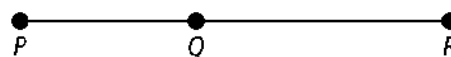
In Exercises 1–6, use the figure below. Find the length of each segment.



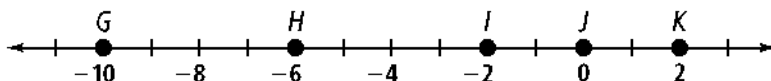
- | | | |
|--------------------|--------------------|--------------------|
| 1. $\overline{AB}$ | 2. $\overline{BC}$ | 3. $\overline{AC}$ |
| 4. $\overline{AD}$ | 5. $\overline{BD}$ | 6. $\overline{CD}$ |

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. Tell whether the segments are congruent.



- | | | |
|---|---|---|
| 12. $\overline{GH}$ and $\overline{HI}$ | 13. $\overline{GH}$ and $\overline{IK}$ | 14. $\overline{HJ}$ and $\overline{IK}$ |
| 15. $\overline{IJ}$ and $\overline{JK}$ | 16. $\overline{HJ}$ and $\overline{GI}$ | 17. $\overline{HK}$ and $\overline{GI}$ |

18. **Reasoning** Points A, Q, and O are collinear. $AO = 10$, $AQ = 15$, and $OQ = 5$. What must be true about their positions on the line?

Algebra Use the figure at the right for Exercises 19 and 20.



19. Given: $ST = 3x + 3$ and $TU = 2x + 9$.

a. What is the value of ST ?

b. What is the value of TU ?

20. Given: $ST = x + 3$ and $TU = 4x - 6$.

a. What is the value of ST ?

b. What is the value of SU ?

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 $\overline{PR}$?

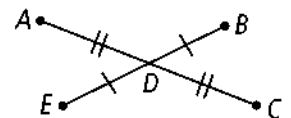
27. You plan to drive north from city A to town B and then continue north to city C. The distance between city A and town B is 39 mi, and the distance between town B and city C is 99 mi.

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?

Algebra Use the diagram at the right for Exercises 29–32.

29. If $AD = 20$ and $AC = 3x + 4$, find the value of x . Then find AC and DC .



30. If $ED = 5y + 6$ and $DB = y + 30$, find the value of y . Then find ED , DB , and EB .