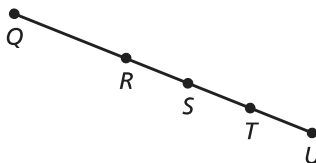


# 1.2 Enrichment and Extension

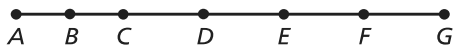
## Measuring and Constructing Segments

1. In the diagram,  $QU = 120$ ,  $SU = 50$ , and  $RS = ST = TU$ . Find the indicated values.

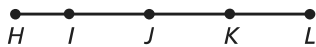


- |         |         |
|---------|---------|
| a. $RS$ | b. $QR$ |
| c. $RT$ | d. $QS$ |
| e. $RU$ | f. $QT$ |

2. You draw a line segment  $\overline{AG}$  and state that  $\overline{AB} \cong \overline{BC}$ ,  $\overline{CD} \cong \overline{DE} \cong \overline{EF} \cong \overline{FG}$ , and  $AG = 16$ .



Your friend then draws a second segment  $\overline{HL}$  and states that  $\overline{AB} \cong \overline{HI}$ ,  $\overline{CD} \cong \overline{IJ} \cong \overline{JK} \cong \overline{KL}$ , and  $HL = 11$ . Find each indicated measure.



- |         |         |         |
|---------|---------|---------|
| a. $HI$ | b. $CD$ | c. $IL$ |
| d. $AD$ | e. $DG$ | f. $HJ$ |

3. There are two different points on the line  $y = -3$  that are exactly 10 units from the point  $(4, 3)$ . Find the coordinates of the points.
4. Your friend claims that a hexagon with the vertices  $A(-2, 1)$ ,  $B(-4, 0)$ ,  $C(-5, -2)$ ,  $D(-4, -4)$ ,  $E(-2, -3)$ , and  $F(-1, -1)$  is equilateral. Is your friend correct? Explain your reasoning.

**In Exercises 5–7, use the information to find the distance between points A and B.**

In a three-dimensional coordinate system, the distance between the two points

$$A(x_1, y_1, z_1) \text{ and } B(x_2, y_2, z_2) \text{ is } AB = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}.$$

- |                  |                  |                  |
|------------------|------------------|------------------|
| 5. $A(-2, 1, 2)$ | 6. $A(0, 0, -2)$ | 7. $A(7, 2, -4)$ |
| $B(2, -3, 4)$    | $B(-1, 5, 7)$    | $B(5, 8, 3)$     |