

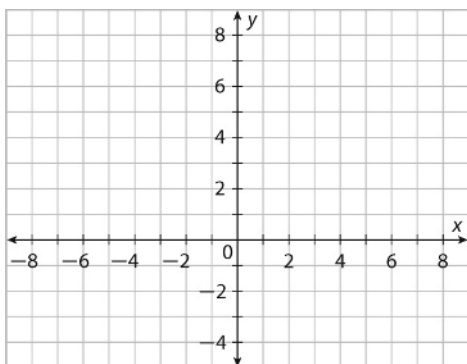
**LESSON**  
**17-2**

# Subdividing a Segment in a Given Ratio

## Practice and Problem Solving: A/B

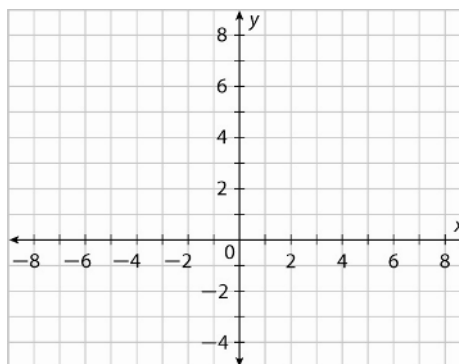
Find the coordinates of point  $Q$  that subdivides the segment with the given endpoints into two sub-segments with the given ratio. In each case, graph both the segment and the point  $Q$ .

1. endpoints:  $A(-4, -2)$ ,  $B(1, 8)$   
ratio: 4 to 1



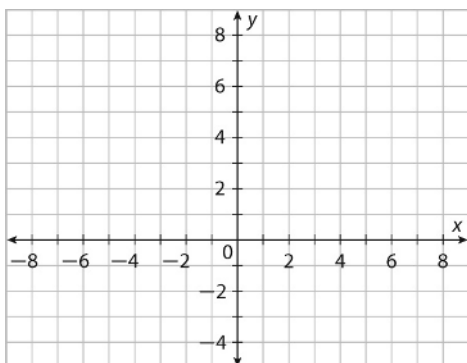
$Q$  (\_\_\_\_\_, \_\_\_\_\_)

2. endpoints:  $S(-6, 6)$ ,  $T(6, -2)$   
ratio: 1 to 4



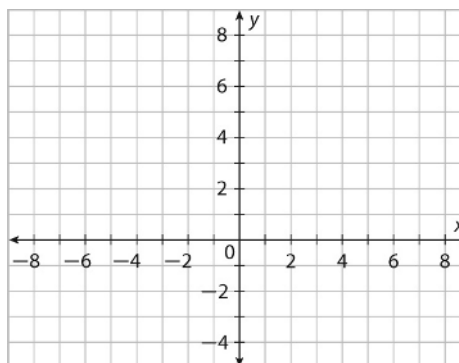
$Q$  (\_\_\_\_\_, \_\_\_\_\_)

3. endpoints:  $G(-3, -4)$ ,  $Z(0, 8)$   
ratio: 2 to 1



$Q$  (\_\_\_\_\_, \_\_\_\_\_)

4. endpoints:  $J(-7, 2)$ ,  $K(8, -3)$   
ratio: 2 to 3



$Q$  (\_\_\_\_\_, \_\_\_\_\_)

Construct the point  $P$  that divides the segment into two sub-segments with the given ratio.

5. Ratio 2 to 1

6. Ratio 3 to 2



7.  $\frac{AF}{DA} = \frac{BF}{EB}$

8. Measure the lengths of  $\overline{DA}$ ,  $\overline{AF}$ ,  $\overline{EB}$ , and  $\overline{BF}$ . Then calculate  $\frac{AF}{DA}$  and  $\frac{BF}{EB}$ , and see if they are equal.

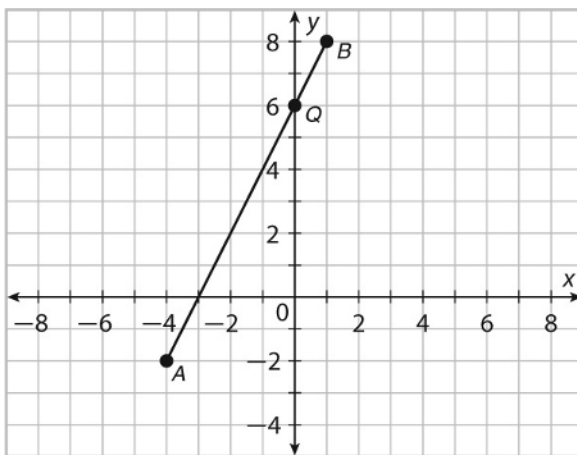
**Success for English Learners**

1. Set up a proportion comparing the ratios of the divided parts of each side.
2. If the ratios were not equal, then  $\overline{AB}$  is not parallel to  $\overline{XY}$ .

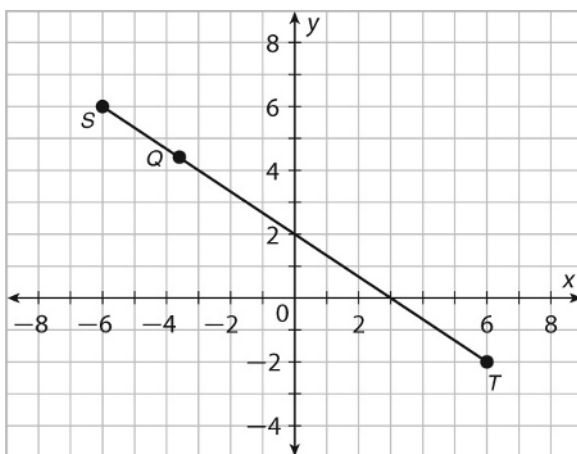
**LESSON 17-2**

**Practice and Problem Solving: A/B**

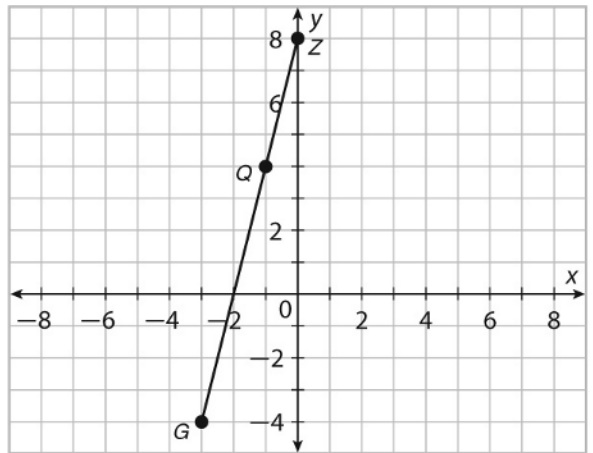
1. Q(0, 6)



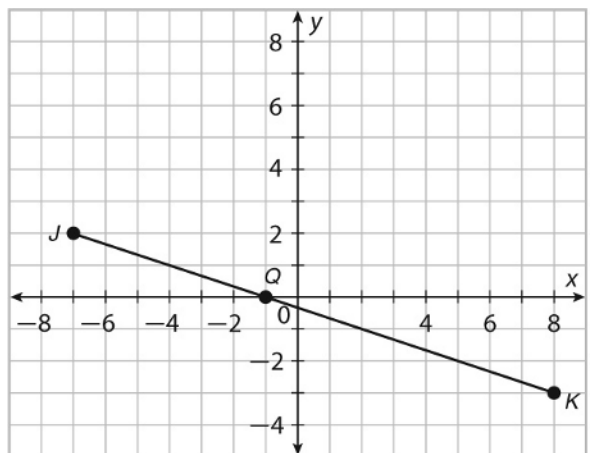
2. Q(-3.6, 4.4)



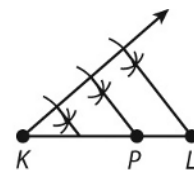
3. Q(-1, 4)



4. Q(-1, 0)



5.



6.

