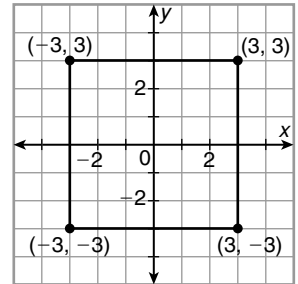


**LESSON**  
**4-7** **Problem Solving**  
**Introduction to Coordinate Proof**

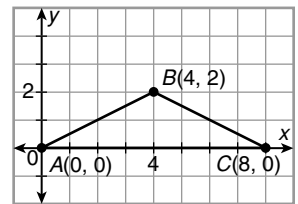
Round to the nearest tenth for Exercises 1 and 2.

1. A fountain is at the center of a square courtyard. If one grid unit represents one yard, what is the distance from the fountain at  $(0, 0)$  to each corner of the courtyard?



\_\_\_\_\_

2. Noah started at his home at  $A(0, 0)$ , walked with his dog to the park at  $B(4, 2)$ , walked to his friend's house at  $C(8, 0)$ , then walked home. If one grid unit represents 20 meters, what is the distance that Noah and his dog walked?

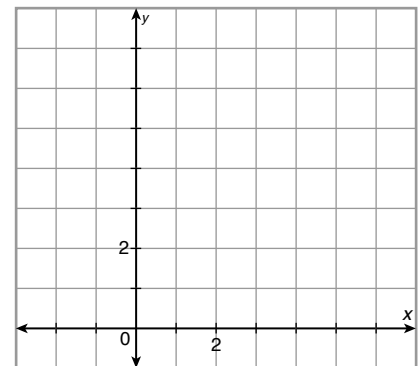


\_\_\_\_\_

Use the following information for Exercises 3 and 4.

Rachel started her cycling trip at  $G(0, 7)$ . Malik started his trip at  $J(0, 0)$ . Their paths crossed at  $H(4, 2)$ .

3. Draw their routes in the coordinate plane.
4. If one grid unit represents  $\frac{1}{2}$  mile, who had ridden farther when their paths crossed? Explain.



\_\_\_\_\_  
\_\_\_\_\_

Choose the best answer.

5. Two airplanes depart from an airport at  $A(9, 11)$ . The first airplane travels to a location at  $N(-250, 80)$ , and the second airplane travels to a location at  $P(105, -400)$ . Each unit represents 1 mile. What is the distance, to the nearest mile, between the two airplanes?

- |                   |                   |
|-------------------|-------------------|
| <b>A</b> 335.3 mi | <b>C</b> 490.3 mi |
| <b>B</b> 477.9 mi | <b>D</b> 597.0 mi |

6. A corner garden has vertices at  $Q(0, 0)$ ,  $R(0, 2d)$ , and  $S(2c, 0)$ . A brick walkway runs from point  $Q$  to the midpoint  $M$  of  $\overline{RS}$ . What is  $QM$ ?

- |                      |                             |
|----------------------|-----------------------------|
| <b>F</b> $(c, d)$    | <b>H</b> $\sqrt{c + d}$     |
| <b>G</b> $c^2 + d^2$ | <b>J</b> $\sqrt{c^2 + d^2}$ |

