7-4: Find Distance in the Coordinate Plane

1. Sample answer: For any two points that are not on a vertical or horizontal line, you can draw a right triangle so that its hypotenuse represents the distance between two points. Then you can use the Pythagorean Theorem to find the length of the hypotenuse.

2. Yes; Sample answer: The distance between two horizontal points or two vertical points could be represented by a horizontal or vertical leg of a right triangle, and the distance between two nonhorizontal and nonvertical points could be represented by the hypotenuse.

3. Sample answer: When two points are on opposite sides of the y-axis, you need to use the absolute values of the x-coordinates to determine the horizontal distance between the points.

4. About 3.16 units

5. About 11.4 units

6. (0, 2.46)

7. 6; 8
100;
10

8. About 19.23 units

9. Scalene

10. a. About 93.9 meters

    b. About 218.9 meters

11. 6 miles

12. (-10, 10), (-10, -8)

13. a. (-5, 2), (-5, 1), (-5, -1), (5, 2)

    b. Sample answer: The point J can be to the right or left of the y-axis, and the congruent side lengths can be $\overline{FG}$ and $\overline{HJ}$ or $\overline{FG}$ and $\overline{IJ}$, and $\overline{EG}$ and $\overline{HJ}$ or $\overline{EG}$ and $\overline{IJ}$.

14. 8.1

15. 6.2