Distance Formula Practice Worksheet

Name **Key** _____ Class Period _____

Use the distance formula to find the distance between each set of points. **Write your answer in radical form and decimal form.** Round to the nearest tenth for the decimal form.

1. (1, 4) and (-2, 3)

$d = \sqrt{(-2-1)^2 + (3-4)^2}$

$d = \sqrt{(-3)^2 + (-1)^2}$

$d = \sqrt{9+1} = \boxed{\sqrt{10}}$ or $\boxed{3.2}$

2. (−6,1) and (3,1)

$d = \sqrt{(3+6)^2 + (1-1)^2}$

$d = \sqrt{(9)^2 + (0)^2}$

$d = \sqrt{81+0} = \sqrt{81} = \boxed{9}$

3. (10, 5) and (40, 45)

$d = \sqrt{(40-10)^2 + (45-5)^2}$

$d = \sqrt{(30)^2 + (40)^2}$

$d = \sqrt{900+1600} = \sqrt{2500} = \boxed{50}$

4. (2,−8) and (−3,3)

$d = \sqrt{(-3-2)^2 + (3+8)^2}$

$d = \sqrt{(-5)^2 + (11)^2}$

$d = \sqrt{25+121} = \boxed{\sqrt{146}}$ or $\boxed{12.1}$

5. (0,3) and (3,−1)

$d = \sqrt{(3-0)^2 + (-1-3)^2}$

$d = \sqrt{(3)^2 + (-4)^2}$

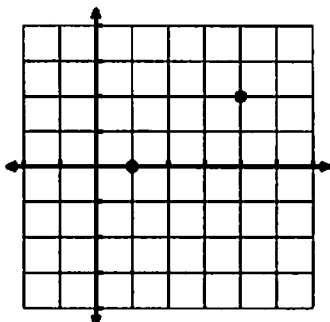$d = \sqrt{9+16} = \sqrt{25} = \boxed{5}$

6. (−2,−1) and (3,−3)

$d = \sqrt{(3+2)^2 + (-3+1)^2}$

$d = \sqrt{(5)^2 + (-2)^2}$

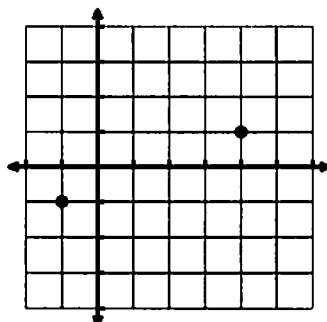$d = \sqrt{25+4} = \boxed{\sqrt{29}}$ or $\boxed{5.4}$

Find the distance between the points on each graph. **Round to the nearest tenth.**

7. (1,0), (4,2)
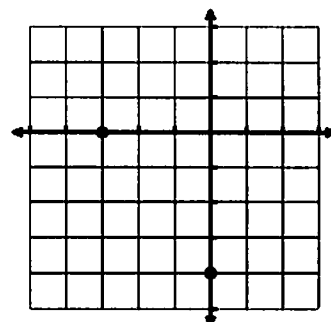

$d = 3.6$

8. (−1,−1), (4,1)

$d = 5.4$

9. (−3,0), (0,−4)

$d = 5$

10. A coordinate plane is placed over the map of a town. A library is located at (– 5, 1), and a museum is located at (3, 5). What is the distance, to the nearest tenth, from the library to the museum?

$$d = \sqrt{(-5-3)^2 + (1-5)^2}$$
$$d = \sqrt{(-8)^2 + (-4)^2}$$
$$d = \sqrt{64 + 16}$$
$$d = \sqrt{80}$$
$$d = 4\sqrt{5}$$
$$d = \boxed{8.9}$$

11. On a map's coordinate grid, Walt City is located at (– 1, – 3) and Koshville is located at (4, 9). How long is a train's route as the train travels along a straight line from Walt City to Koshville? (One map unit equals one mile)

$$d = \sqrt{(4+1)^2 + (9+3)^2}$$
$$d = \sqrt{(5)^2 + (12)^2}$$
$$d = \sqrt{25 + 144}$$
$$d = \sqrt{169}$$
$$d = \boxed{13 \text{ miles}}$$

12. Coach Richt drew his football team's play on a coordinate grid. He placed Matt at (1, 3). He will be passing the ball to A.J. at (– 6, 3). What is the distance, in yards, of the pass from Matt to A.J.?

$$d = \sqrt{(1+6)^2 + (3-3)^2}$$
$$d = \sqrt{(7)^2 + (0)^2}$$
$$d = \sqrt{49 + 0}$$
$$d = \sqrt{49}$$
$$d = \boxed{7 \text{ yards}}$$

13. A Coast Guard helicopter located at (15, 80) receives a distress signal from a boat located at (55, 38). The units on the map represent miles. To the nearest minute how long will it take the helicopter to reach the boat if the helicopter travels at an average speed of 75 miles per hour?

$$d = \sqrt{(55-15)^2 + (38-80)^2}$$
$$d = \sqrt{(40)^2 + (-42)^2}$$
$$d = \sqrt{1600 + 1764}$$
$$d = \sqrt{3364}$$
$$d = 58 \text{ miles}$$

$$\frac{75 \text{ miles}}{1 \text{ hr.}} \cdot \frac{1 \text{ hr.}}{60 \text{ min.}}$$
$$= 1.25 \text{ miles/min}$$
$$\frac{58}{1.25} = \boxed{46 \text{ min.}}$$

14. Brian is driving along a straight highway. His truck can travel 22 miles per gallon of gasoline, and it has 2 gallons of gas remaining. On the map the truck's current location is (7, 12), and the nearest gas station on the highway is located at (16, 52). Each unit on the map represents 1 mile. Will the truck reach the gas station before running out of gas? Support your answer.

$$d = \sqrt{(7-16)^2 + (12-52)^2}$$
$$d = \sqrt{(-9)^2 + (-40)^2}$$
$$d = \sqrt{81 + 1600}$$
$$d = \sqrt{1681}$$
$$d = 41$$

He can drive 44 miles → only needs to drive 41 miles so YES !
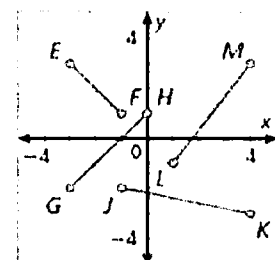
15. Which segment has a length closest to 4 units?

JK (-1,-2), (4,-3)

$$d = \sqrt{(4+1)^2 + (-3+2)^2}$$
$$d = \sqrt{(5)^2 + (-1)^2}$$
$$d = \sqrt{25+1} = \sqrt{26}$$
$$d = 5.1$$

$$\boxed{GH}$$

GH (-3,-2) (0,1)

$d = \sqrt{(0+3)^2 + (1+2)^2}$

$d = \sqrt{(3)^2 + (3)^2}$

$d = \sqrt{9+9} = \sqrt{18} = 3\sqrt{2} = 4.2$

LM (1,-1) (4,3)

$d = \sqrt{(4-1)^2 + (3+1)^2}$

$d = \sqrt{(3)^2 + (4)^2}$

$d = \sqrt{9 + 16} = \sqrt{25} = 5$

EF (-3,3), (-1,1)

$d = \sqrt{(-1+3)^2 + (1-3)^2}$

$d = \sqrt{(2)^2 + (-2)^2}$

$d = \sqrt{4+4} = \sqrt{8} = 2\sqrt{2} = 2.8$