3.24 Distance Between Two Points in the Plane

• Example 1

Find the distance between $(-2, 5)$ and $(2, -3)$.

$$\begin{aligned} d &= \sqrt{[2-(-2)]^2 + [(-3)-5]^2} \\ &= \sqrt{(4)^2 + (-8)^2} \\ &= \sqrt{16 + 64} \\ &= \sqrt{80} \\ &= 4\sqrt{5} \end{aligned}$$

$\sqrt{80} = \sqrt{16 \cdot 5} = 4\sqrt{5}$

CHECK YOURSELF 1

Find the distance between $(2, 5)$ and $(-5, 2)$

CHECK YOURSELF ANSWER

1. $\sqrt{58}$.

3.24 Exercises

Name

Section Date

ANSWERS

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Find the distance between each pair of points.

1. (2, 0) and (−4, 0)

2. (−3, 0) and (4, 0)

3. (0, −2) and (0, −9)

4. (0, 8) and (0, −4)

5. (2, 5) and (5, 2)

6. (3, 3) and (5, 7)

7. (5, 1) and (3, 8)

8. (2, 9) and (7, 4)

9. (−2, 8) and (1, 5)

10. (2, 6) and (−3, 4)

11. (6, −1) and (2, 2)

12. (2, −8) and (1, 0)

13. (−1, −1) and (2, 5)

14. (−2, −2) and (3, 3)

15. (−2, 9) and (−3, 3)

16. (4, −1) and (0, −5)

17. (−1, −4) and (−3, 5)

18. (−2, 3) and (−7, −1)

19. (−2, −4) and (−4, 1)

20. (−1, −1) and (4, −2)

21. (−4, −2) and (−1, −5)

22. (−2, −2) and (−4, −4)

23. (−2, 0) and (−4, −1)

24. (−5, −2) and (−7, −1)