

# 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  $(-5, 2)$

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### ● ● ● CHECK YOURSELF ANSWER

1.  $\sqrt{58}$ .

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# 3.24 Exercises

Name \_\_\_\_\_

Section \_\_\_\_\_

Date \_\_\_\_\_

## A N S W E R S

1. \_\_\_\_\_
2. \_\_\_\_\_
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23. \_\_\_\_\_
24. \_\_\_\_\_

Find the distance between each pair of points.

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|---------------------------|---------------------------|
| 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) |