

NAME \_\_\_\_\_

DATE \_\_\_\_\_

**Module 17** Simplifying Radical Expressions  
**Lesson 2** Adding and Subtracting Radicals

**independent practice**

**Simplify.**

- |   |   |
|---|---|
| 1. $2\sqrt{3} + 4\sqrt{3}$ _____              | 2. $5\sqrt{7} - 3\sqrt{7}$ _____                      |
| 3. $-4\sqrt{6} - 2\sqrt{6}$ _____             | 4. $\sqrt{32} + \sqrt{18}$ _____                      |
| 5. $\sqrt{12} - \sqrt{27}$ _____              | 6. $\sqrt{75} + \sqrt{48}$ _____                      |
| 7. $-\sqrt{20} + \sqrt{45}$ _____             | 8. $\sqrt{54} - \sqrt{24} + 2\sqrt{6}$ _____          |
| 9. $-\sqrt{72} + \sqrt{32} - 3\sqrt{2}$ _____ | 10. $\sqrt[3]{5} - 3\sqrt[3]{5} + 4\sqrt[3]{5}$ _____ |
| 11. $\sqrt{80} - \sqrt{12} + \sqrt{48}$ _____ | 12. $-\sqrt{75} + \sqrt{27} + \sqrt{3}$ _____         |
| 13. $\sqrt{20x^2} - \sqrt{45x^2}$ _____       | 14. $-\sqrt{27x^2} + \sqrt{75x^2}$ _____              |
| 15. $\sqrt[3]{54} + \sqrt[3]{16}$ _____       | 16. $\sqrt[3]{81} - \sqrt[3]{24}$ _____               |
| 17. $\sqrt[3]{8} + \sqrt[3]{40}$ _____        | 18. $\sqrt[3]{128} - \sqrt[3]{56}$ _____              |
| 19. $\sqrt[3]{-8x^3} + 2\sqrt[3]{8x^3}$ _____ | 20. $\sqrt[3]{40x^3} + \sqrt[3]{135x^3}$ _____        |

**Journal**

1. What are like radicals? Give an example and explain.
2. Explain how to add or subtract radicals.
3. Anwar simplified  $-\sqrt{50} + \sqrt{18}$  to  $-2\sqrt{2}$ . Is he correct? Why or why not?
4. Explain how to simplify  $\sqrt{28} - \sqrt{112} + \sqrt{63}$ .
5. Explain how to simplify  $\sqrt[3]{16x^3} + \sqrt[3]{54x^3}$ .

**Cumulative Review**

**Solve.**

- |  |  |
|--|--|
| 1. $\frac{x}{5} = 2$ _____   | 2. $\frac{x}{3} + \frac{x}{4} = 14$ _____  |
| 3. The variable $y$ varies directly as $x$ :<br>$y$ is 18 when $x$ is 6.<br>Find $y$ when $x$ is 2.<br>_____ | 4. The variable $y$ varies inversely as $x$ :<br>$y$ is 16 when $x$ is 6.<br>Find $x$ when $y$ is 12.<br>_____ |

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5. Determine whether  $y$  varies inversely as  $x$ .  
If so, find the constant of variation.

$x$	$y$
14	3
6	7
84	$\frac{1}{2}$
-7	-6

6. Working together, Pablo and Diana can mow their lawn in 35 minutes. If it takes Diane one hour alone, how long would it take Pablo alone?

\_\_\_\_\_

\_\_\_\_\_

7. Katerina can paint a room in 40 minutes. Scott can paint the same room in 60 minutes. How long would it take to paint the entire room if they work together?

\_\_\_\_\_

\_\_\_\_\_

**Simplify.**

8.  $\sqrt{125}$

\_\_\_\_\_

9.  $\sqrt{-70}$

\_\_\_\_\_

10.  $\sqrt[3]{648}$

\_\_\_\_\_

