NAME

Module 17 Simplifying Radical Expressions
Lesson 3 Multiplying Radicals

Simplify each expression.

1. $\sqrt{6} \cdot \sqrt{7}$ $\sqrt{42}$
2. $\sqrt{72} \cdot \sqrt{2}$ 12
3. $\sqrt{x} \cdot \sqrt{x^3}$ x^2
4. $\sqrt{12} \cdot \sqrt{6}$ $6\sqrt{2}$
5. $\sqrt{2}(\sqrt{7} + \sqrt{18})$ $6 + \sqrt{14}$
6. $\sqrt[3]{3} \cdot \sqrt[3]{9}$ 3
7. $\sqrt{5}(\sqrt{m} - \sqrt{5})$ $-5 + \sqrt{5m}$
8. $\sqrt[3]{9} \cdot \sqrt[3]{6}$ $3\sqrt[3]{2}$
9. $\sqrt{3}(\sqrt{7x^2} + \sqrt{6})$ $\sqrt{21}|x| + 3\sqrt{2}$
10. $\sqrt[3]{-54} \cdot 4\sqrt[3]{2}$ $-12\sqrt[3]{4}$
11. $\sqrt{2}(\sqrt{2x} + \sqrt{3})$ $2\sqrt{x} + \sqrt{6}$
12. $\sqrt[3]{-64} \cdot 2\sqrt[3]{3}$ $-8\sqrt[3]{3}$
13. $\sqrt[3]{16}(\sqrt[3]{4} + \sqrt[3]{2})$ $4 + 2\sqrt[3]{4}$
14. $\sqrt[3]{5}(\sqrt[3]{50} - \sqrt[3]{3})$ $5\sqrt[3]{2} - \sqrt[3]{15}$
15. $(\sqrt{7} + \sqrt{z}) \cdot (\sqrt{7} - \sqrt{z})$
    $7 - z$
16. $(\sqrt{7} + \sqrt{5})^2$
    $12 + 2\sqrt{35}$
17. $(\sqrt{2} + \sqrt{2a^2})(\sqrt{2} - \sqrt{a})$
    $2 - \sqrt{2a} + 2|a| - |a|\sqrt{2a}$
18. $(\sqrt{8} + \sqrt{2})^2$
    18
19. $(\sqrt{2} + \sqrt{11}) \cdot (\sqrt{2} - \sqrt{11})$
    -9
20. $(\sqrt{8} - \sqrt{3})^2$
    $11 - 4\sqrt{6}$