

## Simplifying Radical Expressions Using Properties of Radicals - Key

In problems 1-2, use the product property to multiply. Assume that all variables can be any real number

1. $\sqrt[4]{24}$	2. $\sqrt[3]{7x^2}$
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In problems 3-9, simplify each radical using the Product Property. Assume that all variables can be any real number

3. $2\sqrt[3]{4}$	4. $-3\sqrt[3]{4}$
5. $2p^2q\sqrt{6q}$ <i>or</i> $2p^2 q \sqrt{6q}$	6. $x^{10}\sqrt{x}$
7. $3x^{15}y^{12}\sqrt{2y}$ <i>or</i> $3y^{12} x^{15} \sqrt{2y}$	8. $-2x^6y^{10}\sqrt[3]{xy^2}$
9. $4\sqrt{x^2-1}$	

In problem 10, simplify each expression

10. $\frac{4+\sqrt{3}}{5}$	
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In problems 11-15, multiply and simplify. Assume that all variables are greater than or equal to zero

11. 7	12. 2
13. $2a^2b^3\sqrt[3]{9a^2b}$	14. $2x^7y^5\sqrt[5]{10x^2y^2}$
15. $4(3x+1)^3$	

In problems 16-17, Simplify each expression. Assume that all variables are greater than zero.

16. $\frac{x^2\sqrt[3]{3x}}{2}$	17. $\frac{-x^2}{2y^4}$
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In problems 18-20, divide and simplify. Assume that all variables are greater than zero

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18. 3	19. $\frac{4a\sqrt{a}}{b^5}$
20. $\frac{2y^9}{x^2}$	

In problems 21-22, multiply and simplify

21. $\sqrt[6]{200}$	22. $\sqrt[15]{256}$
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