

Name _____

Date _____

Additional Exercises 9.2
Form I
Multiplying and Dividing Radicals

Simplify each expression. If the expression cannot be simplified, so state.

1. $\sqrt{28}$ 1. _____

2. $\sqrt{40}$ 2. _____

3. $\sqrt{48}$ 3. _____

4. $\sqrt{54}$ 4. _____

5. $\sqrt{10}$ 5. _____

6. $\sqrt{72}$ 6. _____

7. $\sqrt{12x^2}$ 7. _____

8. $\sqrt{45y^6}$ 8. _____

9. $\sqrt[3]{24}$ 9. _____

10. $\sqrt[3]{54}$ 10. _____

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11. $\sqrt[4]{48}$

11. _____

Multiply and simplify if possible.

12. $\sqrt{6} \cdot \sqrt{5}$

12. _____

13. $\sqrt{10} \cdot \sqrt{10}$

13. _____

14. $\sqrt{6x} \cdot \sqrt{3x}$

14. _____

15. $\sqrt{10y} \cdot \sqrt{5y}$

15. _____

Simplify using the quotient rule for square roots.

16. $\sqrt{\frac{4}{25}}$

16. _____

17. $\frac{\sqrt{10}}{\sqrt{25}}$

17. _____

18. $\frac{\sqrt{50}}{\sqrt{2}}$

18. _____

19. $\sqrt{\frac{15}{4}}$

19. _____

20. $\frac{\sqrt{100}}{\sqrt{10}}$

20. _____

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Additional Exercises 9.2
Form II
Multiplying and Dividing Radicals

Simplify each expression. If the expression cannot be simplified, so state.

1. $\sqrt{44}$ 1. _____

2. $\sqrt{98}$ 2. _____

3. $\sqrt{180}$ 3. _____

4. $\sqrt{20x^4}$ 4. _____

5. $\sqrt{30y}$ 5. _____

6. $\sqrt{121a}$ 6. _____

7. $\sqrt{18y^{10}}$ 7. _____

8. $\sqrt[3]{56}$ 8. _____

9. $\sqrt[3]{108x^3y^6}$ 9. _____

10. $\sqrt[4]{243x^2y^3}$ 10. _____

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Multiply and simplify if possible.

11. $\sqrt{7} \cdot \sqrt{21}$

11. _____

12. $\sqrt{3} \cdot \sqrt{18}$

12. _____

13. $\sqrt{27x} \cdot \sqrt{12x}$

13. _____

14. $\sqrt{2xy} \cdot \sqrt{7xy}$

14. _____

Simplify using the quotient rule for square roots.

15. $\sqrt{\frac{10}{16}}$

15. _____

16. $\frac{\sqrt{90}}{\sqrt{10}}$

16. _____

17. $\sqrt{\frac{50}{64}}$

17. _____

18. $\frac{\sqrt{20}}{\sqrt{5}}$

18. _____

19. $\frac{\sqrt{88x^2}}{\sqrt{11x}}$

19. _____

20. $\sqrt{\frac{20x^3}{49x}}$

20. _____

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Additional Exercises 9.2
Form III
Multiplying and Dividing Radicals

Simplify each expression. If the expression cannot be simplified, so state.

1. $\sqrt{125}$ 1. _____

2. $\sqrt{52}$ 2. _____

3. $\sqrt{216}$ 3. _____

4. $\sqrt{26x}$ 4. _____

5. $\sqrt{500a^{12}}$ 5. _____

6. $\sqrt[3]{135x^3y^6}$ 6. _____

7. $\sqrt[3]{625b^2}$ 7. _____

8. $\sqrt{90a^5b^3}$ 8. _____

9. $\sqrt[4]{64x^{12}}$ 9. _____

10. $\sqrt[5]{96a^4}$ 10. _____

11. $\sqrt{4x^2 + 12xy + 9y^2}$ 11. _____

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Multiply and simplify if possible.

12. $\sqrt{15x} \cdot \sqrt{3x^3}$ 12. _____

13. $\sqrt{12y^3} \cdot \sqrt{6y^3}$ 13. _____

14. $\sqrt{18xy} \cdot \sqrt{18xy}$ 14. _____

15. $\sqrt[3]{4m} \cdot \sqrt[3]{12m}$ 15. _____

16. $\sqrt[4]{12a^3} \cdot \sqrt[4]{27a}$ 16. _____

Simplify using the quotient rule for square roots.

17. $\sqrt{\frac{80}{16}}$ 17. _____

18. $\sqrt{\frac{39}{81}}$ 18. _____

19. $\frac{\sqrt{50x^3}}{\sqrt{2x}}$ 19. _____

20. $\sqrt[3]{\frac{16}{27}}$ 20. _____

21. $\frac{\sqrt[3]{48}}{\sqrt[3]{3}}$ 21. _____

22. $\frac{\sqrt{80x^5}}{\sqrt{5x}}$ 22. _____