

EXTRA PRACTICE 23**Multiplying, Dividing, And Simplifying Radical Expressions**

Use after Sections 9.2 and 9.3

Name _____

Example: Multiply and simplify. Assume all expressions in radicands are nonnegative.

$$\sqrt{10x^3} \sqrt{2x^2} = \sqrt{20x^5} = \sqrt{4x^4 \cdot 5x} = \sqrt{4} \sqrt{x^4} \sqrt{5x} = 2x^2 \sqrt{5x}$$

Multiply and simplify.

1. $\sqrt{6}\sqrt{15}$ _____

2. $\sqrt{13}\sqrt{13}$ _____

3. $\sqrt{5}\sqrt{125}$ _____

4. $\sqrt{36}\sqrt{18}$ _____

5. $\sqrt{8x}\sqrt{12y}$ _____

6. $\sqrt{12}\sqrt{12x}$ _____

7. $\sqrt{7a}\sqrt{14a}$ _____

8. $\sqrt{8a}\sqrt{9b}$ _____

9. $\sqrt{10x}\sqrt{10x}$ _____

10. $\sqrt{ab}\sqrt{ad}$ _____

11. $\sqrt{3x}\sqrt{27x^4}$ _____

12. $\sqrt{12m^4}\sqrt{6m^3}$ _____

13. $\sqrt{x^2y^4}\sqrt{xy^2}$ _____

14. $\sqrt{x^3y^3}\sqrt{x^2y}$ _____

15. $\sqrt{10ab}\sqrt{25a^2b^3}$ _____

16. $\sqrt{18y}\sqrt{15y}$ _____

17. $\sqrt{5x^2}\sqrt{15x^4}$ _____

18. $\sqrt{3xy}\sqrt{12x}$ _____

19. $\sqrt{21y}\sqrt{7y^2}$ _____

20. $\sqrt{25}\sqrt{25y}$ _____

EXTRA PRACTICE 23**Multiplying, Dividing, And Simplifying Radical Expressions****Use after Sections 9.2 and 9.3**

Example: Divide and simplify. Assume all expressions in radicands are positive.

$$\frac{\sqrt{50x^5}}{\sqrt{2x^9}} = \sqrt{\frac{50x^5}{2x^9}} = \sqrt{\frac{25 \cdot 2x^5}{x^4 \cdot 2x^5}} = \frac{\sqrt{25}}{\sqrt{x^4}} = \frac{5}{x^2}$$

Divide and simplify.

21. $\frac{\sqrt{80}}{\sqrt{5}}$ _____

22. $\frac{\sqrt{6}}{\sqrt{54}}$ _____

23. $\frac{\sqrt{32x}}{\sqrt{2x}}$ _____

24. $\frac{\sqrt{128y^3}}{\sqrt{8y}}$ _____

25. $\frac{\sqrt{75a^9}}{\sqrt{3a^3}}$ _____

26. $\frac{\sqrt{7x}}{\sqrt{28x^5}}$ _____

27. $\frac{\sqrt{8x^{11}}}{\sqrt{72x}}$ _____

28. $\frac{\sqrt{50a^3}}{\sqrt{2}}$ _____

29. $\frac{\sqrt{30y^{12}}}{\sqrt{10y^2}}$ _____

30. $\frac{\sqrt{30x^{15}}}{\sqrt{3x}}$ _____

Rationalize the denominator.

31. $\sqrt{\frac{3}{5}}$ _____

32. $\sqrt{\frac{6}{7}}$ _____

33. $\sqrt{\frac{7}{18}}$ _____

34. $\sqrt{\frac{y}{x}}$ _____

35. $\frac{3}{\sqrt{2}}$ _____

36. $\frac{\sqrt{7}}{\sqrt{5}}$ _____

37. $\frac{\sqrt{3x}}{\sqrt{12}}$ _____

38. $\frac{\sqrt{18x^3}}{\sqrt{5}}$ _____

39. $\sqrt{\frac{6}{x}}$ _____

40. $\frac{\sqrt{3}}{\sqrt{80x}}$ _____