

EXTRA PRACTICE 35
Quotients Involving Square Roots
Use after Section 9.3

Name _____

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.

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

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

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

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

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

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

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

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

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

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

11. $\sqrt{\frac{64}{81}}$ _____

12. $\sqrt{\frac{1}{25}}$ _____

13. $\sqrt{\frac{25}{36}}$ _____

14. $\sqrt{\frac{1440}{6250}}$ _____

15. $\sqrt{\frac{49}{a^2}}$ _____

16. $\sqrt{\frac{x^2y^2}{324}}$ _____

17. $\sqrt{\frac{4a^2}{49}}$ _____

18. $\sqrt{\frac{1960}{3610}}$ _____

EXTRA PRACTICE 35 (continued)
Quotients Involving Square Roots
Use after Section 9.3

Example: Rationalize the denominator.

$$\begin{aligned}\sqrt{\frac{5}{7}} &= \sqrt{\frac{5 \cdot 7}{7 \cdot 7}} \\ &= \sqrt{\frac{35}{49}} \\ &= \frac{\sqrt{35}}{7}\end{aligned}$$

$$\begin{aligned}\text{or } \sqrt{\frac{5}{7}} &= \frac{\sqrt{5}}{\sqrt{7}} \cdot \frac{\sqrt{5}}{\sqrt{5}} \\ &= \frac{\sqrt{5} \cdot \sqrt{5}}{\sqrt{7} \cdot \sqrt{5}} \\ &= \frac{\sqrt{35}}{\sqrt{49}} \\ &= \frac{\sqrt{35}}{7}\end{aligned}$$

Rationalize the denominator.

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

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

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

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

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

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

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

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

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

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

Approximate to three decimal places.

29. $\sqrt{\frac{1}{5}}$ _____

30. $\sqrt{\frac{2}{7}}$ _____

31. $\sqrt{\frac{5}{8}}$ _____

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

33. $\frac{14}{\sqrt{6}}$ _____

34. $\frac{9}{\sqrt{2}}$ _____

35. $\frac{5}{\sqrt{18}}$ _____

36. $\frac{6}{\sqrt{11}}$ _____