

9.1 Notetaking with Vocabulary (continued)**Quotient Property of Square Roots**

Words The square root of a quotient equals the quotient of the square roots of the numerator and denominator.

Numbers $\sqrt{\frac{3}{4}} = \frac{\sqrt{3}}{\sqrt{4}} = \frac{\sqrt{3}}{2}$

Algebra $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$, where $a \geq 0$ and $b > 0$

Notes:

Extra Practice

In Exercises 1–12, simplify the expression.

1. $\sqrt{24}$

2. $-\sqrt{48}$

3. $\sqrt{162g^6}$

4. $-\sqrt{512h^7}$

5. $\sqrt{\frac{25}{64}}$

6. $-\sqrt{\frac{6}{49}}$

7. $-\sqrt{\frac{196}{r^4}}$

8. $\sqrt{\frac{49x^3}{64y^2}}$

9. $\sqrt[3]{-135}$

10. $\sqrt[3]{729}$

11. $-\sqrt[3]{-192x^5}$

12. $\sqrt[3]{\frac{12a^6}{512b^4}}$

9.1 Notetaking with Vocabulary (continued)

In Exercises 13–20, simplify the expression.

13. $\frac{\sqrt{15}}{\sqrt{500}}$

14. $\sqrt{\frac{8}{100}}$

15. $\frac{\sqrt{3x^2y^3}}{\sqrt{80xy^3}}$

16. $\frac{8}{\sqrt[3]{16}}$

17. $\frac{5}{-3 - 3\sqrt{3}}$

18. $\frac{3}{4 + 4\sqrt{5}}$

19. $\frac{4}{\sqrt{2} - 5\sqrt{3}}$

20. $\frac{\sqrt{5}}{\sqrt{3} + \sqrt{5}}$

21. The ratio of the length to the width of a *golden rectangle* is $(1 + \sqrt{5}) : 2$. The length of a golden rectangle is 62 meters. What is the width? Round your answer to the nearest meter.

In Exercises 22–27, simplify the expression.

22. $3\sqrt{8} + 3\sqrt{2}$

23. $2\sqrt{18} - 2\sqrt{20} - 2\sqrt{5}$

24. $3\sqrt{12} + 3\sqrt{18} + 2\sqrt{27}$

25. $2\sqrt{5}(\sqrt{6} + 2)$

26. $(\sqrt{7} - \sqrt{3})(\sqrt{7} + \sqrt{3})$

27. $\sqrt[3]{2}(\sqrt[3]{108} - \sqrt[3]{135})$