

10-2 Skills Practice**Simplifying Radical Expressions**

Simplify each expression.

1. $\sqrt{28}$

2. $\sqrt{40}$

3. $\sqrt{72}$

4. $\sqrt{99}$

5. $\sqrt{2} \cdot \sqrt{10}$

6. $\sqrt{5} \cdot \sqrt{60}$

7. $3\sqrt{5} \cdot \sqrt{5}$

8. $\sqrt{6} \cdot 4\sqrt{24}$

9. $2\sqrt{3} \cdot 3\sqrt{15}$

10. $\sqrt{16b^4}$

11. $\sqrt{81a^2d^4}$

12. $\sqrt{40x^4y^6}$

13. $\sqrt{75m^5p^2}$

14. $\sqrt{\frac{5}{3}}$

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

16. $\sqrt{\frac{6}{7}} \cdot \sqrt{\frac{1}{3}}$

17. $\sqrt{\frac{q}{12}}$

18. $\sqrt{\frac{4h}{5}}$

19. $\sqrt{\frac{12}{b^2}}$

20. $\sqrt{\frac{45}{4m^4}}$

21. $\frac{2}{4 + \sqrt{5}}$

22. $\frac{3}{2 - \sqrt{3}}$

23. $\frac{5}{7 + \sqrt{7}}$

24. $\frac{4}{3 - \sqrt{2}}$

10-2 Practice**Simplifying Radical Expressions**

Simplify.

1. $\sqrt{24}$

2. $\sqrt{60}$

3. $\sqrt{108}$

4. $\sqrt{8} \cdot \sqrt{6}$

5. $\sqrt{7} \cdot \sqrt{14}$

6. $3\sqrt{12} \cdot 5\sqrt{6}$

7. $4\sqrt{3} \cdot 3\sqrt{18}$

8. $\sqrt{27tu^3}$

9. $\sqrt{50p^5}$

10. $\sqrt{108x^6y^4z^5}$

11. $\sqrt{56m^2n^4p^5}$

12. $\frac{\sqrt{8}}{\sqrt{6}}$

13. $\sqrt{\frac{2}{10}}$

14. $\sqrt{\frac{5}{32}}$

15. $\sqrt{\frac{3}{4}} \cdot \sqrt{\frac{4}{5}}$

16. $\sqrt{\frac{1}{7}} \cdot \sqrt{\frac{7}{11}}$

17. $\frac{\sqrt{3k}}{\sqrt{8}}$

18. $\sqrt{\frac{18}{x^3}}$

19. $\sqrt{\frac{4y}{3y^2}}$

20. $\sqrt{\frac{9ab}{4ab^4}}$

21. $\frac{3}{5 - \sqrt{2}}$

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

23. $\frac{5}{\sqrt{7} + \sqrt{3}}$

24. $\frac{3\sqrt{7}}{-1 - \sqrt{27}}$

25. **SKYDIVING** When a skydiver jumps from an airplane, the time t it takes to free fall a given distance can be estimated by the formula $t = \sqrt{\frac{2s}{9.8}}$, where t is in seconds and s is in meters. If Julie jumps from an airplane, how long will it take her to free fall 750 meters?

26. **METEOROLOGY** To estimate how long a thunderstorm will last, meteorologists can use the formula $t = \sqrt{\frac{d^3}{216}}$, where t is the time in hours and d is the diameter of the storm in miles.

a. A thunderstorm is 8 miles in diameter. Estimate how long the storm will last. Give your answer in simplified form and as a decimal.

b. Will a thunderstorm twice this diameter last twice as long? Explain.