

# 10-2 Practice B

## Simplifying Radicals

Form K

**Simplify each radical expression.**

1.  $\sqrt{196}$

2.  $\sqrt{28}$

3.  $-\sqrt{275}$

4.  $3\sqrt{12}$

5.  $-5\sqrt{128}$

6.  $9a\sqrt{243}$

7.  $\sqrt{324x^2}$

8.  $3\sqrt{27m^4n}$

9.  $-2\sqrt{147a^2b^4}$

**Simplify each product.**

10.  $\sqrt{12} \cdot \sqrt{20}$

11.  $2\sqrt{18} \cdot \sqrt{75}$

12.  $\frac{1}{2}\sqrt{72} \cdot 3\sqrt{48}$

13.  $10\sqrt{12} \cdot (-9\sqrt{27})$

14.  $\sqrt{24a} \cdot \sqrt{32b}$

15.  $\sqrt{15x} \cdot \sqrt{20xy}$

16.  $3\sqrt{50f^2g^3} \cdot \sqrt{63fg}$

17.  $\sqrt{xy^7z^2} \cdot \sqrt{x^2yz^3}$

18.  $4\sqrt{15hk^2} \cdot (-8\sqrt{5hk})$

19. A carpenter is building rectangular walls for a room addition. The width of a section of wall is two times the height  $h$ . Each section has a brace that connects two opposite corners of the section. What is a simplified expression for the length of a brace?

20. A walking path is shaped like a rectangle with a width 7 times its length  $l$ . What is a simplified expression for the distance between opposite corners of the walking path?

Simplify each radical expression.

21.  $\sqrt{\frac{36}{25}}$

22.  $\frac{1}{\sqrt{7}}$

23.  $-5\sqrt{\frac{121}{361}}$

24.  $\frac{\sqrt{6}}{\sqrt{3y}}$

Explain why each radical expression is or is not in simplified form.

25.  $\frac{\sqrt{12n}}{n}$

26.  $\frac{5}{\sqrt{5}}$

27.  $5\sqrt{2}$

28.  $12\sqrt{24}$

Simplify each radical expression.

29.  $\frac{\sqrt[3]{s}}{\sqrt[3]{t}}$

30.  $\frac{\sqrt{120}}{\sqrt{6}}$

31.  $\frac{-5\sqrt{3}}{\sqrt{12}}$

32.  $\sqrt{\frac{5x}{49x^2}}$

**33. Writing** Describe when it is necessary to rationalize the denominator. Explain how you do this. Provide an example to demonstrate.