

LESSON
7-5

Practice C
Rational Exponents

Simplify each expression. All variables represent nonnegative numbers.

1. $81^{\frac{1}{2}}$

2. $216^{\frac{1}{3}}$

3. $10,000^{\frac{1}{4}}$

4. $121^{\frac{1}{2}} + 64^{\frac{1}{3}}$

5. $121^{\frac{1}{2}} - 27^{\frac{1}{3}}$

6. $0^{\frac{1}{2}} + 243^{\frac{1}{5}}$

7. $49^{\frac{1}{2}} - 1000^{\frac{1}{3}}$

8. $16^{\frac{5}{2}}$

9. $81^{\frac{3}{4}}$

10. $243^{\frac{2}{5}}$

11. $16^{\frac{4}{4}}$

12. $144^{\frac{3}{2}}$

13. $\sqrt[3]{x^6}$

14. $\sqrt{x^{16}y^2}$

15. $\sqrt[3]{y^9z^{12}}$

16. $(a^2b^4)^{\frac{1}{2}}\sqrt{b^6}$

17. $\frac{\sqrt[4]{x^8y^4}}{xy}$

18. $\frac{(x^3y)^3}{\sqrt{x^2y^4}}$

19. Given a cube with volume V , you can use the formula $S = 6V^{\frac{2}{3}}$ to find the surface area of the cube. Find the surface area of a cube that has volume 27 cm^3 .

LESSON
7-5

Practice B
Rational Exponents

Simplify each expression. All variables represent nonnegative numbers.

1. $27^{\frac{1}{3}}$

2. $121^{\frac{1}{2}}$

3. $0^{\frac{1}{3}}$

4. $64^{\frac{1}{2}} + 27^{\frac{1}{3}}$

5. $16^{\frac{1}{4}} + 8^{\frac{1}{3}}$

6. $100^{\frac{1}{2}} - 64^{\frac{1}{6}}$

7. $15^{\frac{1}{5}} + 49^{\frac{1}{2}}$

8. $25^{\frac{3}{2}}$

9. $32^{\frac{3}{5}}$

10. $16^{\frac{3}{4}}$

11. $16^{\frac{5}{6}}$

12. $121^{\frac{3}{2}}$

13. $\sqrt[5]{y^5}$

14. $\sqrt{x^4y^{12}}$

15. $\sqrt[3]{a^6b^3}$

16. $(x^{\frac{1}{2}})^4 \sqrt{x^6}$

17. $(x^{\frac{1}{3}}y)^3 \sqrt{x^2y^2}$

18. $\frac{(x^4)^8}{\sqrt[3]{x^3}}$

19. Given a cube with volume V , you can use the formula $P = 4V^{\frac{1}{3}}$ to find the perimeter of one of the cube's square faces. Find the perimeter of a face of a cube that has volume 125 m^3 .
