

6-6 Skills Practice

Rational Exponents

Write each expression in radical form, or write each radical in exponential form.

1. $3^{\frac{1}{6}}$

2. $8^{\frac{1}{5}}$

3. $\sqrt{51}$

4. $\sqrt[4]{15^3}$

5. $12^{\frac{2}{3}}$

6. $\sqrt[3]{37}$

7. $(c^3)^{\frac{3}{5}}$

8. $\sqrt[3]{6xy^2}$

Evaluate each expression.

9. $32^{\frac{1}{5}}$

10. $81^{\frac{1}{4}}$

11. $27^{\frac{1}{3}}$

12. $4^{\frac{1}{2}}$

13. $16^{\frac{3}{2}}$

14. $(-243)^{\frac{4}{5}}$

15. $27^{\frac{1}{3}} \cdot 27^{\frac{5}{3}}$

16. $\left(\frac{4}{9}\right)^{\frac{3}{2}}$

Simplify each expression.

17. $c^{\frac{12}{5}} \cdot c^{\frac{3}{5}}$

18. $m^{\frac{2}{9}} \cdot m^{\frac{16}{9}}$

19. $\left(q^{\frac{1}{2}}\right)^3$

20. $p^{\frac{1}{5}} \cdot p^{\frac{1}{2}}$

21. $x^{\frac{6}{11}} \cdot x^{\frac{4}{11}}$

22. $\frac{x^{\frac{2}{3}}}{x^{\frac{1}{4}}}$

23. $\frac{y^{\frac{1}{2}}}{y^{\frac{1}{4}}}$

24. $\frac{n^{\frac{1}{3}}}{n^{\frac{1}{6}} \cdot n^{\frac{1}{2}}}$

25. $\sqrt[12]{64}$

26. $\sqrt[8]{49a^8b^2}$