

Simplify Using your Exponent Rules

1. $(8^2)^{\frac{1}{3}}$

2. $(x^{\frac{1}{5}})^0$

3. $(2c^{\frac{2}{3}})^6$

4. $(c^{\frac{1}{5}}d^{-\frac{4}{3}})^{-15}$

5. $(81x^{12})^{0.75}$

6. $(64x^4)^{\frac{3}{2}}$

7. $\frac{b^{\frac{1}{3}}}{\sqrt[3]{b}}$

8. $(b^{\frac{1}{2}})^2$

9. $(\sqrt[3]{x^2})^6$

10. $\frac{(4\sqrt{x})^2}{(2x)^5}$

11. $(9a^6b^{-4})^{-\frac{1}{2}}$

12. $\frac{5\sqrt{b^3}}{b^{\frac{4}{3}}}$

13. **Multiple Choice:** Which expression is equivalent to: $(8w^7x^{-5}y^3z^{-9})^{-\frac{2}{3}}$?

A. $\frac{x^{\frac{10}{3}}z^6}{4w^{\frac{14}{3}}y^2}$

B. $\frac{4w^{\frac{14}{3}}y^2}{x^{\frac{10}{3}}z^6}$

C. $\frac{2w^{\frac{5}{3}}y^{\frac{1}{3}}}{x^{\frac{7}{3}}z^{\frac{11}{3}}}$

D. $\frac{x^{\frac{7}{3}}z^{\frac{11}{3}}}{2w^{\frac{5}{3}}y^{\frac{1}{3}}}$

14. **Multiple Choice:** Rewrite as a rational exponent $(\sqrt[a]{b^c})^d$

A. $b^{\frac{ac}{d}}$

B. $b^{\frac{ad}{c}}$

C. $b^{\frac{cd}{a}}$

D. b^{acd}

Rewrite the rational exponent then solve the equation.

15. $32 = n^{\frac{1}{2}} + 24$

16. $(m + 5)^{\frac{1}{2}} = (2m - 7)^{\frac{1}{2}}$

17. $n = (30 - n)^{\frac{1}{2}}$

