

Rational Exponents Practice

Write in simplest radical form. (Using only one radical sign in each problem)

1. $64^{1/2} =$

2. $8^{-1/2} =$

3. $25^{3/2} =$

4. $x^{1/2} \cdot x^{1/2} =$

5. $a^{3/5} \cdot a^{1/5} =$

6. $k^{2/3} \cdot k^{-1/3} =$

7. $(4x^2y)^{1/3} =$

8. $(9x)^{-1/2} =$

Write each expression with fractional exponents.

1. $\sqrt{x^5} =$

2. $\sqrt[5]{6x^4} =$

3. $\sqrt{8x^4} =$

4. $3a\sqrt[6]{a^4} =$

5. $3\sqrt[8]{3^5x^3y^4}$

6. $xy^3\sqrt[4]{5xy}$

7. $a^3\sqrt[4]{ab} =$

8. $\sqrt{x^3y^6}$

Simplify.

9. $a^{1/5} \bullet a^{3/5} =$

10. $x^{3/4} \bullet x^{1/4} =$

11. $2^{2/3} \bullet a^{1/3} =$

12. $x^{1/6} \bullet y^{1/4} =$

13. $a^{3/5} \bullet b^{1/3} =$

14. $2x \bullet y^{4/5} z^{1/5} =$

15. $(x \bullet y^2)^{1/3} =$

16. $(a^{1/3})^{1/2} =$

17. $(a^8)^{3/4} =$

18. $(a^{-1/2})^{-2} =$

19. $(x^{-1/2} \bullet x^{3/4})^{-2} =$

20. $(a^2 b^{-6})^{-1/2} =$

21. $\frac{x^{4/5}}{3x^{2/5}} =$

22. $(2x^{1/2} y^{3/4})(3x^{1/4}) =$

23. $2x^{5/7} y^{3/7} =$

24. $6(a^2 b^3)^{1/8} =$

25. $(2a^4 b^{3/10})^2 =$

26. $(5a^{-1/2} b^{-3/2})^2 =$

28. $\left(\frac{2x^3 y^{1/2}}{x^2}\right)^{-1} =$

29. $(4x^3 y^5)^{1/6} =$