

Math 3
Rational Exponents 1

Name _____

Express using rational exponents.

1. $\sqrt{14}$

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

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

5. $\sqrt[3]{16a^5b^7}$

3. $\sqrt{25a^3b^4}$

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

Express in simplest radical form.

7. $7^{\frac{1}{2}}$

10. $4^{\frac{1}{3}}x^{\frac{2}{3}}y^{\frac{1}{3}}$

8. $36^{\frac{1}{4}}$

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

9. $x^{\frac{3}{2}}y^{\frac{5}{2}}$

12. $5^{\frac{1}{6}}x^{\frac{1}{2}}y^{\frac{1}{3}}$

Evaluate without a calculator.

13. $9^{\frac{3}{2}}$

17. $16^{\frac{3}{2}}$

14. $16^{\frac{3}{4}}$

18. $4^{\frac{3}{2}}$

15. $9^{\frac{1}{3}} \cdot 9^{\frac{5}{3}}$

19. $\sqrt[4]{81}$

16. $343^{\frac{2}{3}}$

20. $36^{\frac{3}{4}} \div 36^{\frac{1}{4}}$