

Name _____ Date _____ Hour _____

Algebra 2 (basic) ~ 2.2 Properties of Exponents (Radical Notation to Rational Exponent Notation)

Goal: evaluate and simplify expressions with exponents & apply

Rewrite the expression using rational exponent notation.

1. $\sqrt[3]{11}$

2. $\sqrt[4]{5}$

3. $\sqrt[5]{23}$

4. $\sqrt{7}$

5. $\sqrt[3]{17}$

6. $\sqrt[6]{2}$

7. $\sqrt[4]{8}$

8. $\sqrt[3]{15}$

9. $\sqrt{10}$

10. $\sqrt[7]{3}$

11. $\sqrt[5]{6}$

12. $\sqrt[8]{21}$

Rewrite the expression using radical notation.

13. $2^{1/3}$

14. $5^{1/4}$

15. $11^{1/2}$

16. $6^{1/5}$

17. $23^{1/7}$

18. $31^{1/4}$

19. $103^{1/2}$

20. $17^{1/3}$

21. $4^{1/3}$

22. $7^{1/8}$

23. $8^{1/5}$

24. $12^{1/14}$

Evaluate the expression without using a calculator.

25. $\sqrt[3]{8}$

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

27. $\sqrt[5]{32}$

28. $\sqrt[3]{64}$

29. $\sqrt[4]{1}$

30. $\sqrt[3]{125}$

31. $(1)^{1/6}$

32. $(16)^{1/4}$

33. $(-8)^{1/3}$

Evaluate the expression using a calculator. Round the result to two decimal places.

34. $\sqrt[3]{5}$

35. $\sqrt[3]{24}$

36. $\sqrt[4]{10}$

37. $\sqrt[4]{3}$

38. $\sqrt[5]{16}$

39. $\sqrt[5]{8}$

40. $(6)^{1/5}$

41. $(12)^{1/3}$

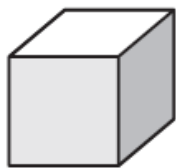
42. $(7)^{1/4}$

43. $(4)^{1/5}$

44. $(29)^{1/3}$

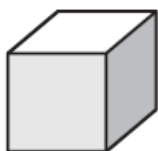
45. $(126)^{1/6}$

46. **Geometry** Find the length of an edge of the cube shown below.



Volume = 216 in.³

47. **Geometry** Find the length of an edge of the cube shown below.



Volume = 527 cm³

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SOLUTIONS

Practice A

1. $11^{1/3}$ 2. $5^{1/4}$ 3. $23^{1/5}$ 4. $7^{1/2}$ 5. $17^{1/3}$
6. $2^{1/6}$ 7. $8^{1/4}$ 8. $15^{1/3}$ 9. $10^{1/2}$ 10. $3^{1/7}$
11. $6^{1/5}$ 12. $21^{1/8}$ 13. $\sqrt[3]{2}$ 14. $\sqrt[4]{5}$
15. $\sqrt{11}$ 16. $\sqrt[5]{6}$ 17. $\sqrt[7]{23}$ 18. $\sqrt[4]{31}$
19. $\sqrt{103}$ 20. $\sqrt[3]{17}$ 21. $\sqrt[3]{4}$ 22. $\sqrt[8]{7}$
23. $\sqrt[5]{8}$ 24. $\sqrt[14]{12}$ 25. 2 26. 3 27. 2
28. 4 29. 1 30. 5 31. 1 32. 2 33. -2
34. 1.71 35. 2.88 36. 1.78 37. 1.32
38. 1.74 39. 1.52 40. 1.43 41. 2.29
42. 1.63 43. 1.32 44. 3.07 45. 2.24
46. 6 in. 47. 8.08 cm.