

Math 2 Unit 3.7 Example Radical form and Exponential form

Period _____

Write each expression in radical form.

1) $2^{\frac{3}{2}}$

2) $5^{\frac{1}{2}}$

3) $3^{-\frac{5}{2}}$

4) $7^{\frac{5}{2}}$

5) $(10v)^{\frac{1}{2}}$

6) $(n^2)^{-\frac{1}{4}}$

7) $(4n)^{\frac{4}{3}}$

8) $(6p)^{\frac{5}{3}}$

Write each expression in exponential form. Write with a negative exponent as needed.

9) $\sqrt[4]{5}$

10) $(\sqrt[4]{10})^5$

11) $\frac{1}{(\sqrt[4]{x})^5}$

12) $(\sqrt[3]{3x})^5$

13) $\sqrt[4]{5x^2}$

14) $(\sqrt{6a})^5$

Solve each equation.

$$15) 27 = x^{\frac{3}{2}}$$

$$16) 243 = x^{\frac{5}{4}}$$

$$17) b^{\frac{3}{2}} = 729$$

$$18) 3125 = b^{\frac{5}{3}}$$

$$19) \frac{1}{3} = x^{-\frac{1}{3}}$$

$$20) 27 = n^{\frac{3}{4}}$$

$$21) -2v^{\frac{1}{4}} = -6$$

$$22) 1 = x^{\frac{1}{3}} - 4$$

$$23) 729 = (27n)^{\frac{3}{2}}$$

$$24) 729 = (n - 28)^{\frac{3}{2}}$$

$$25) 735 = 6 + (9n)^{\frac{3}{2}}$$

$$26) 12 = 9 + (b - 29)^{\frac{1}{4}}$$

$$27) -1 - 4(v - 23)^{\frac{1}{3}} = -13$$

$$28) 2 + 3(5n - 19)^{-\frac{1}{4}} = 3$$

$$29) -2922 = -4(p + 20)^{\frac{3}{2}} - 6$$

$$30) \frac{238}{243} = 1 - 5(7 - n)^{-\frac{5}{3}}$$

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$(\sqrt{2})^3$

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$\sqrt{5}$

3) $3^{-\frac{5}{2}}$

$\frac{1}{(\sqrt{3})^5}$

4) $7^{\frac{5}{2}}$

$(\sqrt{7})^5$

5) $(10v)^{\frac{1}{2}}$

$\sqrt{10v}$

6) $(n^2)^{-\frac{1}{4}}$

$\frac{1}{\sqrt[4]{n^2}}$

7) $(4n)^{\frac{4}{3}}$

$(\sqrt[3]{4n})^4$

8) $(6p)^{\frac{5}{3}}$

$(\sqrt[3]{6p})^5$

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$(5x^2)^{\frac{1}{4}}$

14) $(\sqrt{6a})^5$

$(6a)^{\frac{5}{2}}$

Solve each equation.

$$15) 27 = x^{\frac{3}{2}}$$

{9}

$$16) 243 = x^{\frac{5}{4}}$$

{81}

$$17) b^{\frac{3}{2}} = 729$$

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$$18) 3125 = b^{\frac{5}{3}}$$

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$$19) \frac{1}{3} = x^{-\frac{1}{3}}$$

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{81}

$$22) 1 = x^{\frac{1}{3}} - 4$$

{125}

$$23) 729 = (27n)^{\frac{3}{2}}$$

{3}

$$24) 729 = (n - 28)^{\frac{3}{2}}$$

{109}

$$25) 735 = 6 + (9n)^{\frac{3}{2}}$$

{9}

$$26) 12 = 9 + (b - 29)^{\frac{1}{4}}$$

{110}

$$27) -1 - 4(v - 23)^{\frac{1}{3}} = -13$$

{50}

$$28) 2 + 3(5n - 19)^{-\frac{1}{4}} = 3$$

{20}

$$29) -2922 = -4(p + 20)^{\frac{3}{2}} - 6$$

{61}

$$30) \frac{238}{243} = 1 - 5(7 - n)^{-\frac{5}{3}}$$

{-20}