

Warm Up
Write in radical form.

1) $k^{\frac{4}{5}}$ $\sqrt[5]{k^4}$ 2) $y^{-1.2}$ $y^{-\frac{6}{5}} = \frac{1}{\sqrt[5]{y^6}}$ $^{-1.2 = -\frac{12}{10} = -\frac{6}{5}}$

Write in exponential form.

3) $(\sqrt[3]{x})^2$ $x^{\frac{2}{3}}$ 4) $\sqrt[4]{2x^5}$ $2x^{\frac{5}{4}}$

Simplify.

5) $(x^{\frac{2}{3}} y^{\frac{-1}{5}})^{-15}$ $\frac{y^3}{x^{10}}$ 6) $(-32y^{20})^{\frac{2}{5}}$ $(\sqrt[5]{-32})^2$ $(-2)^2$ $4y^8$

7) $25^{-1.5}$ $25^{-\frac{3}{2}}$ $(\sqrt{25})^{-3}$ 5^{-3} $\frac{1}{125}$ 8) $(-27)^{\frac{4}{3}}$ $(\sqrt[3]{-27})^4$ $(-3)^4$ 81

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7.5 Solving Square Root and Other Radical Equations

To solve a radical equation, isolate the radical on one side of the equation, then raise both sides of the equation to the same power, solve for x

Examples

$$\begin{aligned} \sqrt{5x+1} - 2 &= 4 \\ &+ 2 \quad + 2 \\ \hline \sqrt{5x+1} &= 6^2 \\ 5x+1 &= 36 \\ -1 \quad -1 \\ \hline 5x &= 35 \\ x &= 7 \end{aligned}$$



$x = 7$

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Examples

Isolate the radical...how?

Add 8
÷ 3

What is the opposite of square rooting?

$$3\sqrt{5x+4} - 8 = 4$$

+8 +8

$$\frac{3\sqrt{5x+4}}{3} = \frac{12}{3}$$

$$(\sqrt{5x+4})^2 = (4)^2$$

$$5x+4 = 16$$

$$\begin{array}{r} -4 \quad -4 \\ \hline 5x = 12 \\ x = \frac{12}{5} \end{array}$$

$x = \frac{12}{5}$

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Examples

Isolate the radicals on each side of the equal sign.

Square both sides of the equation.

$$((5x+1)^{\frac{1}{2}})^2 - ((2x+7)^{\frac{1}{2}})^2 = 0$$

$$\sqrt{5x+1} - \sqrt{2x+7} = 0$$

$$(\sqrt{5x+1})^2 = (\sqrt{2x+7})^2$$

$$5x+1 = 2x+7$$

$$3x = 6$$

$$x = 2$$

$x = 2$

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Examples

Isolate the parenthesis...how?
 $\div 2$


What do you need to multiply $1/3$ by in order to get 1?

$\frac{2(x+5)^{\frac{1}{3}}}{2} = \frac{6}{2}$

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

$x+5 = 27$

$x = 22$

 $x = 22$

pull for answer here

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RADICAL EQUATIONS
 Digital Pyramid Sum Puzzle

To check your understanding, go to the google classroom and let's complete the puzzle.
 I've already done some of them for you.

- ★ Open the file in your Google drive and click **File->Make a Copy**
- ★ Drag the card over first, then backspace to put in the correct answer.
- ★ When you are done, put your name where it has COPY OF and then **"Share Link"** with me.

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