

Good morning!

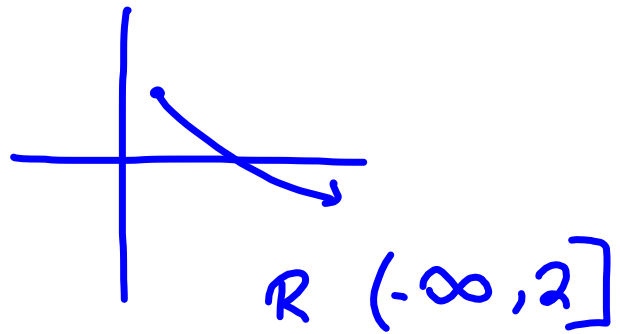
-all cell phones in the holder at front of the room.

Warm-up

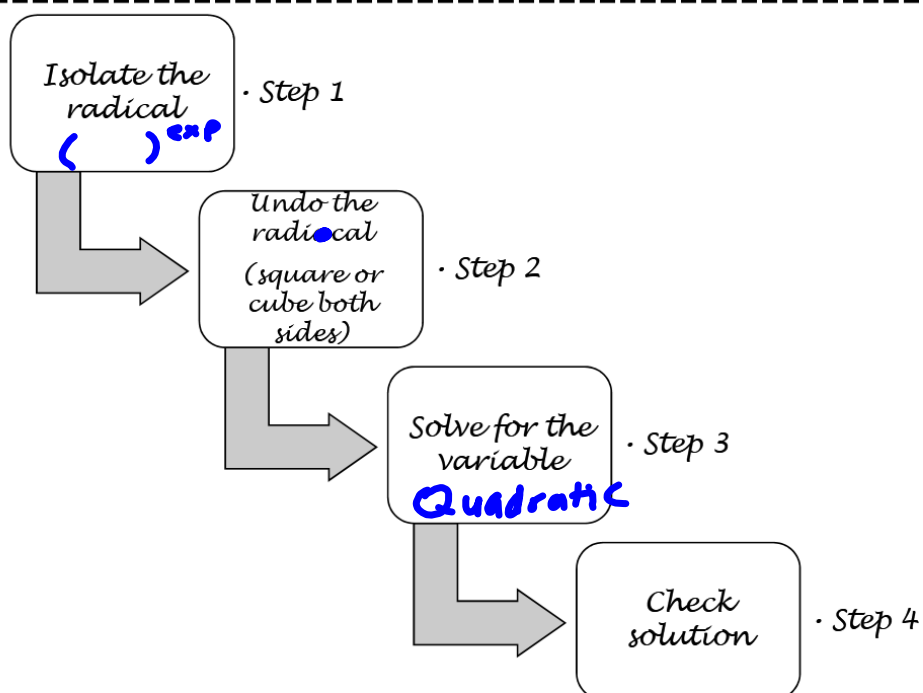
Simplify

$$\sqrt[3]{\frac{x^2}{y}} \cdot \sqrt[3]{\frac{y^2}{y^2}} = \sqrt[3]{\frac{x^2 y^2}{y^3}} = \boxed{\frac{\sqrt[3]{x^2 y^2}}{y}}$$

$$\begin{aligned} & (2x^3y^4)^3 \\ & 2^3x^9y^{12} \end{aligned} \quad \boxed{8x^9y^{12}}$$



Solving Radical Equations and Rational Exponent Equations



Solve the equation. Round your answer to the HUNDREDTHS place when necessary. Remember to check for **EXTRANEOUS SOLUTIONS**.

<p>Example 1 $\sqrt{x-4} - 2 = 12$</p> $\frac{\sqrt{x-4} - 2 = 12}{+2 \quad +2}$ $(\sqrt{x-4})^2 = (14)^2$ $x - 4 = 196$ $\frac{x - 4 = 196}{+4 \quad +4}$ $x = 200$ <p>Check</p> $\sqrt{200-4} - 2 = 12$ $\sqrt{196} - 2 = 12$ $14 - 2 = 12$	<p>Example 2 $3\sqrt[3]{x+5} - 2 = 13$</p> $\frac{3\sqrt[3]{x+5} - 2 = 13}{+2 \quad +2}$ $3\sqrt[3]{x+5} = 15$ $(\sqrt[3]{x+5})^3 = (5)^3$ $x + 5 = 125$ $x = 120$ <p>Check</p> $3\sqrt[3]{120+5} - 2 = 13$ $3(5) - 2 = 13$
<p>Example 3 $(\sqrt{5x+14})^2 = (\sqrt{2x-1})^2$</p> $\frac{5x+14 = 2x-1}{-2x \quad -2x}$ $3x+14 = -1$ $3x = -15$ $x = -5$ <p>Check</p> $\sqrt{5(-5)+14} = \sqrt{-11} = \sqrt{-11}$	<p>Example 4 $(3\sqrt{4x-12})^2 = (2\sqrt{x})^2$</p> $9(4x-12) = 4x$ $36x - 108 = 4x$ $\frac{-36x - 108 = -4x}{-36x \quad -36x}$ $\frac{-108 = -32x}{-32 \quad -32}$ $3.375 = x$ $\frac{27}{8} = x$ <p>Check</p> $3\sqrt{4 \cdot (27/8) - 12} =$ $2\sqrt{27/8} =$

Solve the equation. Round your answer to the HUNDREDTHS place when necessary. Remember to check for **EXTRANEOUS SOLUTIONS**.

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

$$5x - 4 = x^2$$

$$0 = x^2 - 5x + 4$$

$$0 = (x-1)(x-4)$$

$x=1$
 $\sqrt{5-4} = 1$
 $x=4$
 $\sqrt{20-4} = 4$

$x=1$ $x=4$

Example 6 $3x^5 - 4 = 26$

$$3x^5 = 30$$

$$\sqrt[5]{x^5} = \sqrt[5]{10}$$

$x = 1.58$

Example 7 $(x-4)^{\frac{1}{3}} - 3 = 1$

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

$$x-4 = 64$$

$x = 68$

Example 8 $5(2x+3)^{\frac{1}{2}} + 10 = 100$

$$5(2x+3)^{\frac{1}{2}} = 90$$

$$(2x+3)^{\frac{1}{2}} = 18$$

$$2x+3 = 324$$

$$2x = 321$$

$x = 160.5$

$$1) (x+7)^2 = ((7x+67)^{\frac{1}{2}})^2$$

$$\begin{aligned} (x+7)(x+7) \\ x^2 + 7x + 7x + 49 \\ x^2 + 14x + 49 \end{aligned}$$

$$\begin{array}{r} x^2 + 14x + 49 = 7x + 67 \\ -7x \quad -67 \quad -7x \quad -67 \\ \hline \end{array}$$

$$x^2 + 7x - 18 = 0$$

$$(x+9)(x-2) = 0$$

$$x = \cancel{9} \quad x = 2$$

