

There are three steps to solving a radical equation: 1) Isolate the radical.  
2) Raise both sides to the power of the root.  
3) Solve for x.

➤ Examples:

<p>1. <del><math>(\sqrt{x})^2 = 8</math></del> <math>x = 64</math></p> <p><math>x =</math> _____</p>	<p>2. <del><math>(\sqrt{x+7})^2 = 8</math></del> <math>x+7 = 64</math> <math>-7 \quad -7</math> <math>x = 57</math></p> <p><math>x =</math> _____</p>	<p>3. <del><math>2\sqrt{x+6} = 14</math></del> <math>(\sqrt{x+6})^2 = (7)^2</math> <math>x+6 = 49</math> <math>-6 \quad -6</math> <math>x = 43</math></p> <p><math>x =</math> _____</p>
<p>4. <math>-4\sqrt{x} + 11 = 3</math> <math>-11 \quad -11</math> <del><math>-4\sqrt{x} = -8</math></del> <math>-4 \quad -4</math> <math>(\sqrt{x})^2 = (2)^2</math> <math>x = 4</math></p> <p><math>x =</math> _____</p>	<p>5. <math>\sqrt{x-2} - 2 = 2</math> <math>+2 \quad +2</math> <del><math>(\sqrt{x-2})^2 = (4)^2</math></del> <math>x-2 = 16</math> <math>+2 \quad +2</math> <math>x = 18</math></p> <p><math>x =</math> _____</p>	<p>6. <del><math>-3\sqrt[3]{2x+5} = -21</math></del> <math>-3 \quad -3</math> <del><math>(\sqrt[3]{2x+5})^3 = (7)^3</math></del> <math>2x+5 = 343</math> <math>-5 \quad -5</math> <math>\frac{2x}{2} = \frac{338}{2} \quad x = 169</math></p> <p><math>x =</math> _____</p>
<p>7. <del><math>(\sqrt{10x^2 - 49})^2 = (3x)^2</math></del> <math>10x^2 - 49 = 9x^2</math> <math>-9x^2 \quad -9x^2</math> <math>x^2 - 49 = 0</math> <math>(x-7)(x+7) = 0</math> <math>x = -7, 7</math></p> <p><math>x =</math> _____</p>	<p>8. <del><math>(\sqrt{2x-6})^2 = (\sqrt{5x-15})^2</math></del> <math>2x-6 = 5x-15</math> <math>-2x \quad -2x</math> <math>-6 = 3x-15</math> <math>+15 \quad +15</math> <math>\frac{9}{3} = \frac{3x}{3} \quad x = 3</math></p> <p><math>x =</math> _____</p>	<p>9. <del><math>(\sqrt[3]{6x-5})^3 = (\sqrt[3]{3x+2})^3</math></del> <math>6x-5 = 3x+2</math> <math>-3x \quad -3x</math> <math>3x-5 = 2</math> <math>+5 \quad +5</math> <math>\frac{3x}{3} = \frac{7}{3} \quad x = \frac{7}{3}</math></p> <p><math>x =</math> _____</p>

Lesson 3 → Square Root & Cube Root Equations HOMEWORK

<p>1. <math>(\sqrt{x-1})^2 = (3)^2</math>  <math>x-1 = 9</math>  <math>+1 \quad +1</math>  <math>x = 10</math></p>	<p>2. <math>(2)^2 = \left(\sqrt{\frac{x}{2}}\right)^2</math>  <math>2 \cdot 4 = \frac{x}{2} \cdot 2</math>  <math>8 = x</math></p>
<p>3. <math>(\sqrt{-8+2x})^2 = (0)^2</math>  <math>-8+2x = 0</math>  <math>-2x \quad -2x</math>  <math>-8 = -2x</math>  <math>-2 \quad -2</math>  <math>x = 4</math></p>	<p>4. <math>(\sqrt{x+4})^2 = (7)^2</math>  <math>x+4 = 49</math>  <math>-4 \quad -4</math>  <math>x = 45</math></p>
<p>5. <math>(\sqrt[3]{x-3})^3 = (5)^3</math>  <math>x-3 = 125</math>  <math>+3 \quad +3</math>  <math>x = 128</math></p>	<p>6. <math>(\sqrt{2x-6})^2 = (\sqrt{3x-14})^2</math>  <math>2x-6 = 3x-14</math>  <math>-2x \quad -2x</math>  <math>-6 = x-14</math>  <math>+14 \quad +14</math>  <math>x = 8</math></p>
<p>7. <math>(\sqrt{8x})^2 = (x)^2</math>  <math>8x = x^2</math>  <math>-8x \quad -8x</math>  <math>0 = x^2 - 8x</math>  <math>x(x-8) = 0</math>  <math>x = 0</math>  <math>x = 8</math></p>	<p>8. <math>(\sqrt[3]{9-x})^3 = (\sqrt[3]{1-9x})^3</math>  <math>9-x = 1-9x</math>  <math>+9x \quad +9x</math>  <math>9+8x = 1</math>  <math>-9 \quad -9</math>  <math>8x = -8</math>  <math>\frac{8x}{8} = \frac{-8}{8}</math>  <math>x = -1</math></p>
<p>9. <math>(\sqrt{3-2x})^2 = (\sqrt{1-3x})^2</math>  <math>3-2x = 1-3x</math>  <math>+3x \quad +3x</math>  <math>3+x = 1</math>  <math>-3 \quad -3</math>  <math>x = -2</math></p>	<p>10. <math>(x)^2 = (\sqrt{20-x})^2</math>  <math>x^2 = 20-x</math>  <math>x^2 + x - 20 = 0</math>  <math>(x+5)(x-4) = 0</math>  <math>x = -5</math>  <math>x = 4</math></p>