

B.4 Solving Square Root and other Radical Equations~**Day 2****STEPS:**

1. Isolate the part with parentheses with the rational exponent.
2. Raise each side to the **reciprocal** power.
3. Solve for the variable.

$$(x)^{\frac{3}{2}} - 4 = 121$$

+4 +4

Flip the fraction!

$$\left(x^{\frac{3}{2}}\right)^{\frac{2}{3}} = (125)^{\frac{2}{3}}$$

$$x = 25$$

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Problem 2 Solving Other Radical Equations

$$3(x+1)^{\frac{3}{5}} + 4 = 28$$

-4 -4

$$\frac{3}{3}(x+1)^{\frac{3}{5}} = \frac{24}{3}$$

$$\left((x+1)^{\frac{3}{5}}\right)^{\frac{5}{3}} = (8)^{\frac{5}{3}}$$

$$x+1 = 32$$

$$x = 31$$

Jan 26-9:51 AM

*** Special Rule! ***

When you raise both sides of an equation to a fraction exponent, if the fraction has an even-numbered denominator then the equation will have two solutions. \pm (plus-minus)

$$(x)^{\frac{2}{3}} + 5 = 30$$

-5 -5

$$\left((x)^{\frac{2}{3}} \right)^{\frac{3}{2}} = (25)^{\frac{3}{2}}$$

$$x = \pm 125$$

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*** Special Rule! ***

When you raise both sides of an equation to a fraction exponent, if the fraction has an even-numbered denominator then the equation will have two solutions. \pm (plus-minus)

$$\frac{-3(x+2)^{\frac{4}{5}}}{-3} = \frac{-48}{-3}$$

$$\left((x+2)^{\frac{4}{5}} \right)^{\frac{5}{4}} = (16)^{\frac{5}{4}}$$

$$x+2 = \pm 32$$

$$x+2 = 32$$

$$x = 30$$

$$x+2 = -32$$

$$x = -34$$

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