**2.6 – Other Types of Equations**

**Solving Equations Involving Rational Exponents**

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**Examples:**

1.  b. 

c. 

**Solving Equations Using Factoring**

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**Examples:**

1. ** b. **

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**Solving Radical Equations**

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**Examples:**

1. ** b. **

**Solving Absolute Value Equations**

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**Examples:**

1. ** b. **

**Solving Quadratic Equations**

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1. ** b. **

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# Key Concepts

* Rational exponents can be rewritten several ways depending on what is most convenient for the problem. To solve, both sides of the equation are raised to a power that will render the exponent on the variable equal to 1. See [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_01), [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_02), and [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_03).
* Factoring extends to higher-order polynomials when it involves factoring out the GCF or factoring by grouping. See [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_04) and [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_05).
* We can solve radical equations by isolating the radical and raising both sides of the equation to a power that matches the index. See [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_06) and [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_07).
* To solve absolute value equations, we need to write two equations, one for the positive value and one for the negative value. See [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_08).
* Equations in quadratic form are easy to spot, as the exponent on the first term is double the exponent on the second term and the third term is a constant. We may also see a binomial in place of the single variable. We use substitution to solve. See [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_09) and [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_10).
* Solving a rational equation may also lead to a quadratic equation or an equation in quadratic form. See [Example](http://cnx.org/contents/E6wQevFf%405.241%3AuI1As6DV%4012/Other-Types-of-Equations#Example_02_06_11).