Key Terms:
- Distance
- Index
- Midpoint
- Pythagorean Theorem
- Radical Equation
- Radical Expression
- Radicand
- Square Root Function
- Rationalize the Denominator

Material by Subject:

5.1. Multiplying Powers with the Same Base
- Understand what a power is and why it works.
- Be able to evaluate expressions with an exponent of 1 or 0.
- Be able to multiply powers with the same base (keep the base, add the exponents)
  - Numerical bases
  - Algebraic expressions
  - Scientific notation
- Be able to simplify an expression with rational exponents using the above property of exponents.

5.2. More Multiplication Properties of Exponents
- Be able to raise a power to a power (keep the base, multiply the exponents)
  - Numerical bases
  - Algebraic expressions
- Be able to raise a product to a power (raise each base, including coefficients, to the power outside the parentheses)
  - Numerical bases
  - Algebraic expressions
  - Scientific notation
- Be able to simplify an expression with rational exponents using the above property of exponents.

5.3. Division Properties of Exponents
- Be able to divide powers with the same base (keep the base, subtract the exponents)
  - Numerical bases
  - Algebraic expressions
  - Scientific notation
- Be able to raise a quotient to a power (raise each base, including coefficients, in both the numerator and denominator to the power outside the parentheses)
- Be able to re-write expressions with negative exponents as equivalent expressions with positive exponents

5.4. Rational Exponents and Radicals
- Understand the anatomy of a radical expression (index and radicand)
- Be able to rewrite a power in terms of another base (Ex: $32^1 = 2^5$)
- Understand how the index of a radical and the denominator of a rational exponent relate
- Be able to simplify a simple radical.
- Be able to convert from a rational power to a radical.
- Be able to convert from a radical to exponential form.

- Know how to convert in order to solve word problems (easier to enter exponential form into calculator)

5.5. Simplifying Radicals
- Be able to simplify a single radical in the numerator
- Be able to simplify a fraction with a radical in the denominator
- Recognize perfect squares

5.6. Pythagorean Theorem, Midpoint, & Distance
- Understand what the Pythagorean theorem is and how it relates to distance.
- Given the endpoints of one side of a triangle, be able to calculate its midpoint
- Given the endpoints of one side of a triangle, be able to calculate its distance.
- Given the midpoint and an endpoint of a line segment, be able to calculate the other endpoint.

5.7. Square Root Equations
- Be able to rearrange the equation to solve for the variable.
    o Step 1: Isolate the radical.
    o Step 2: Square both sides of the equation.
    o Step 3: Simplify both sides
    o Step 4: Rearrange the equation to isolate the variable.
- If you get a quadratic equation, either factor it or use the quadratic formula to determine the roots.