Chapter 9 Summary: Rational Exponents and Roots
Course Textbook by McKeague, Essentials of Elementary and Intermediate Algebra: A Combine Course, XYZ Textbook

Section 1:
Know The Following Definitions
- Square roots
- Higher order roots
- Rational Exponents (with numerator of 1)
- Rational Exponents (with numerator of -1)

Be Able To
- Find square roots
- Find higher order roots
- Simplify expressions with rational exponents (with numerator or 1 and -1)
- Applying the concepts

Section 2:
Know The Following Definitions
No additional definitions

Be Able To
- Identify basic Rational Function
- Find the domain of basic Rational Function
- Construct graph of basic Rational Function
- Apply the concepts

Sample Applications of Chapter 9 Content
- Use a given formula to calculate animal heart rate

Example: \( N(w) = Kw^{\frac{1}{2}} \) where \( N(w) \) is the heart rate, \( w \) is the weight of the animal in pounds, and \( K \) is a constant

- Use a given formula to calculate an interest rate

Example: \( r = \sqrt[4]{\frac{A}{P}} - 1 \) where \( r \) is the annual interest rate, \( P \) is the amount invested, \( A \) is the amount you want the investment to grow to, and \( t \) the time in years. This formula assumes the interest is compounded annually.

- Use a given formula to calculate diagonal distance

- Use a given formula to calculate distance to the horizon
Example: $d = \sqrt{8000k + k^2}$ where $d$ is the distance you can see, $k$ is your height above the earth’s surface

- Use a given formula to calculate the radius of a sphere