**List of Topics for the Final – Advanced Math 8**

**WAYS TO STUDY:**

* Review notes
* Review homework assignments
* Review quizzes (ask me)
* Review lessons from my website: (lischwe.weebly.com)
* Looking at the textbook or textbook website (connected.mcgraw-hill.com)
* Replay the Kahoots: 1st Semester Topics: **goo.gl/kThuVD** 2nd Semester Topics: **goo.gl/hH1nnt**

Unit 1 – Rational Numbers

* Converting fractions to decimals, decimals to frac.
* Converting repeating decimals to fractions
* Finding square/cube roots that are whole numbers
* Estimating roots that are decimals
* Solving x2 and x3 equations
* Rational vs. Irrational numbers

Unit 2 - Functions

* What is/is not a function
  + Table, Graph, or Situation
* Evaluating using function notation (like f(3) )
* Linear vs. nonlinear equations
* Linear vs. nonlinear tables
* Writing an equation from a table
* Graphs of stories (Tom climbed a hill, ran down, etc.)

Unit 3 – Linear Relationships

* Proportional vs. nonproportional
* Linear vs. nonlinear
* Finding slope from a graph
* Finding slope from 2 points without a graph
* Writing y = mx + b equations from a graph
* Graphing y = mx + b equations
* Interpreting the meaning of the slope and y-intercept in a story problem

Unit 4 – Solving Equations

* Solving equations:
  + Variables on both sides
  + With fractions
  + Distributive property/combining like terms
* Writing equations from a real-world situation
* Equations with no solution or infinite solutions

Unit 5 – Systems of Equations

* Solving systems of equations by:
  + Graphing
  + Substitution
  + Elimination
* System of equations story problems
* Checking the answer of a system

Unit 6 – Exponents & Scientific Notation

* Power times a power (x9•x3)
* Power divided by a power (x9/x3)
* Power to a power (x9)3
* Zero and Negative Exponents (30 = ?, 2 -3 = ?)
* Converting to and from Scientific Notation
* Adding, Subtracting, Multiplying, Dividing Sci Not.4

Unit 8 – Angles

* Complementary, Supplementary, Vertical Angles
* Parallel Line Angles: Corresponding, Alternate Interior, Alternate Exterior, Same-side Interior
* Triangle Angle Sum Rule

Unit 8 – Transformations, Congruence, Similarity

* Translations
* Reflections (x-axis, y-axis, across x = 5 or y = 5, etc.)
* Rotations (without patty paper)
* Dilations
* Testing to see if shapes are similar
* Finding the scale factor of similar figures

Unit 9 – Pythagorean Theorem

* Finding the hypotenuse of a right triangle
* Finding a leg of a right triangle
* Finding the distance between two points on a graph

Unit 10 – Volume

* Area & Circumference of a circle
* Rectangular and Triangular Prisms
* Rectangular Pyramids
* Cylinders, Cones, Spheres

Unit 11 – Bivariate Data

* Choosing a good line of best fit for a scatter plot
* Interpreting the slope of a line of best fit
* Finding percentages from frequency tables

Unit 12 – Solving Equations with More than One Variable

* Getting a variable by itself in an equation
* Solving for y and then graphing