



Algebra Two

Our Study Guides for Algebra II

Protected: Our Study Guides

Unit 1: Number Lines, Intervals, and Sets

[Paul](#) [Paul2](#) (Paul asked me to add on these last few pages):

Set notation (union, intersection, subset)

Absolute value inequalities

[Skylar](#):

Linear inequalities – graph on a number line

Compound inequalities

Using set and interval notation to write solutions to linear and compound inequalities

Unit II: Algebraic Manipulation: Rational Expressions and Exponents

[Eden](#):

Factoring quadratic and cubic expressions

Polynomial multiplication and division (including synthetic division)

[Sophie](#):

Rational expression addition, subtraction, multiplication, and division

Solving rational equations (watching out for dividing by zero!)

[Siena](#):

Review of basic exponent rules and simplification

Unit III: Radical Equations

SAMPLE____ Review properties of radicals (integer exponents)

SAMPLE____ Simplifying radicals and rationalizing the denominator

SAMPLE____ Solving radical equations

Unit IV: Functions and Relations

[Siena:](#)

Circles

[Kelly:](#)

What is a function? (Including the definition of a function and function notation; the vertical line test; independent and dependent variables)

Composition of functions

[Elizabeth:](#)

Finding the domain and range of a function visually (given a graph, what is the domain and range); expressing the domain and range in interval notation.

Finding the domain of a function algebraically (no dividing by zero, no negatives under the square root sign); expressing the domain and range in interval notation

Evaluating a piecewise function from (a) its equation or (b) its graphs

[Ellie:](#)

Increasing/decreasing intervals for functions; relative maxima/minima
(visually and on calculator)

Max/min word problems (e.g. maximizing area and minimizing cost)

Unit V: Linear Functions

[Julia:](#)

Equations of vertical and horizontal lines

Graphing lines (and their intersections)

Finding parallel and perpendicular lines

[Eric](#):

Systems of Equations (graphing, substitution, elimination)

[Symone](#): (graphical solutions to problems [1](#), [2](#), and [3](#))

Linear regressions

Unit VI: Quadratics & Inequalities

[Akiem](#):

Complex numbers (addition, subtraction, multiplication, division)

Powers of i

[Henry](#):

Completing the square (vertex form); finding the vertex

Quadratic formula and discriminant; finding the zeros (real, complex)

[Marina1](#) [Marina2](#):

Graphing quadratics (1, 3, 5, ...)

Quadratic-linear systems

[August](#):

Linear & Quadratic Inequalities (number line)

Linear & Quadratic Inequalities (coordinate plane)

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