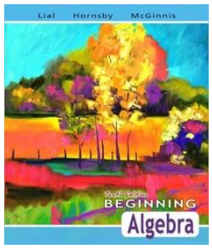
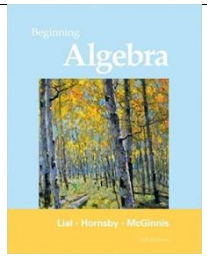
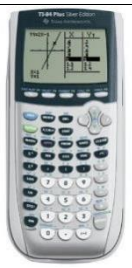
Algebra I / Beginning Algebra

Syllabus

Instructor	Clark Brown	**Phone**	(702) 714-0133
E-mail	clark@homeschoolalgebra.com. This is the best way to contact me; I check it throughout the day. You can also message me from the Schoology Learning Management System or text me at the phone number above.		
Online Face to Face Help	I am typically available throughout the week to meet with you via video-conference and answer any math questions you may have or assist you with other issues you may be having with the course. Simply email, message me through the Schoology LMS, or text me and I can often meet with you within the hour in the "Zoom Room" at the LMS.		
Availability	I check my e-mail throughout the day and make every effort to respond as soon as possible. If you do not receive a reply in a timely manner, and especially by the next business day, please send me another message or call me (I won't be offended!). I'm here to help you, and if you don't hear from me it's possible I either didn't receive your message or it accidentally got overlooked.		

Course materials and equipment:

Textbook: Beginning Algebra,10th or 11th edition. ISBN 978-0321437266 or 978-0321673480	 	**Calculator**: The TI-83 or 84 Plus Graphing Calculator is **recommended** for this course. DO NOT get a TI-85,86, 89, Inspire, or Casio. The color version is fine, but not necessary.	

Course Description:

- An introductory course in algebra that includes the following topics: linear equations and inequalities and their graphs, systems of linear equations, exponents and polynomials, factoring, rational expressions, roots and radicals, and quadratic equations.

Prerequisite: Students must have a solid understanding of Prealgebra conepts to be succesful in Algebra I / Beginning Algebra. Students who are unsure of their skill level should contact the instructor to assess what level they will be most successful at.

Course Goals

- Develop an understanding of the foundational concepts, reasoning, and skills necessary for success in further mathematics courses.
- Simplify algebraic expressions and solve algebraic equations using proper mathematical form and technique.
- Solve applied problems using algebraic concepts.

Resources for Help:

- **Your Instructor**: Many students find higher level mathematics to be some of their more challenging courses and make the mistake of waiting too long to get help. As your instructor, I am your first and best resource for help! If you find yourself struggling please don't hesitate to contact me!
- **Learning Management System (LMS)**: This course uses the Schoology LMS to organize and manage its resources and to facilitate the submission of course assignments. Instructions will be provided for access upon enrollment.
- **Lecture Videos and Handouts:** I have created short lecture videos explaining nearly every topic and problem type of the course. Links to these videos are included in each lesson folder at the Learning Management System (LMS). Lecture handouts specific to each video are also provided to assist students in taking good notes to facilitate their learning.
- **The Khan Academy** at http://www.khanacademy.org/, **HippoCampus** at http://www.hippocampus.org/Algebra, and **Mathispower4u** at http://mathispower4u.yolasite.com/ offer a multitude of short video lectures on nearly every algebra concept. When you are stuck and don't know what else to do, try searching here or on YouTube for immediate help!

Grading Policy:

Regular Exams	50%
Comprehensive Final Exam	20%
Lecture Notes	10%
Homework	10%
Selected Problems	10%
Total	**100%**

- **Examinations:** Regular exams will be given at the end of each chapter and will account for 50% of your grade. A comprehensive final exam will be given at the end of the course and account for an additional 20% of your grade. Exam problems are similar to those assigned as homework and as found in the selected problems. The best way to prepare for your exams is to regularly review your lecture notes, homework problems, and selected problems. Exams are closed note and closed book. One 3 x 5 card with notes of your choice will be allowed on the final exam, but NOT on the regular exams. Parents will proctor their student's exams and upload them to the appropriate dropbox in the LMS using the procedure described below.

- **Lecture Notes**: 10% of your grade will be awarded simply for watching the lecture videos, taking notes using the fillable lecture notes, and submitting a scanned image of them along with your other assignments to the appropriate dropbox in the Learning Management System. In order to receive credit your lecture notes must be both **neat** and **complete**. At the top of each **set** of lecture notes submitted ((i.e., just one statement for the entire set of notes submitted for each lesson folder)**, the student is required to include the following statement: "I have conscientiously viewed / completed _____% of the lecture videos / notes for Lesson Folder _____",** filling in the blanks appropriately**.** At the end of the syllabus is a page of these statements that can be clipped and attached instead of handwriting it. See below for instructions about how to submit assignments.

- **Homework:** 10% of your grade will be determined by homework that will be submitted for each lesson folder and checked for general completeness and competency. **Please note carefully that individual problems will not be graded.** It is the student's responsibility to check his/her answers with the back of the book and contact the instructor with questions as needed. However, your understanding of the homework will be tested on the Selected Problems assignments by giving problems that are very similar to those assigned as homework. **At the top of each set of homework sections you submit for each Lesson Folder you are required to include the following statement: "I have shown all work and conscientiously completed ____% of the HW for Lesson Folder _____", filling in the appropriate percentage and sections.** (At the end of the syllabus is a page of these statements that can be clipped and attached instead of handwriting it.) Your homework score will be based upon your self-assessment which I will validate.

> One must learn by doing the thing;
> for though you think you know it you
> have no certainty, until you try.
> Sophocles, c.450 BC

- **Selected Problems:** The remaining 10% of your grade will be determined by selected problems that you will work out on paper / pencil and then scan and upload to a dropbox located in the appropriate Lesson folder in the LMS. These problems will be specifically chosen to give you an idea of the most important concepts in each section, and that will help prepare you for the exams.

- **Be Neat and Organized and Communicate Effectively**: All written work should be done neatly and in a clear and organized manner. These skills are especially important in mathematics where many mistakes can be avoided simply by taking the time to be neat and organized. All Homework, Selected Problems, and Exams should be done in pencil with a good quality eraser at hand to correct mistakes. Graph paper should be used for all graphing (download for free at LMS), and a 6 inch ruler should be used for drawing straight lines. The student's goal in all written work should be to make it as easy as possible for your instructor to review, and in it to clearly communicate to your instructor your understanding of the material. Wherever applicable the student should use proper English grammar and sentence structure.

  > Success takes time and willingness to objectively and honestly analyze your mistakes. That's the key to getting smarter at anything in life.
  > *William J. O'Neil*

- **Electronic Submission of Assignments**: To facilitate grading of your assignments, your work must be scanned to a **single** PDF file. This can be easily done several ways, including the following:
  1. **CamScanner** is an app available for both Android and iPhones that will allow you to use the camera on a smart phone to scan your work to a pdf.
  2. Alternatively, a computer scanner can be used to accomplish the same thing. These scanners typically comes with software that will scan to a PDF file, or **cutepdf** and **scan2pdf** are free programs that can be downloaded for use with a personal scanner.
  3. A third option would be to take a good quality picture of your work and insert it into a Word document, then use the "SAVE AS…" feature to save the Word document as a PDF file.

  In preparing your written work, keep in mind that you will be scanning and uploading it, so leave a half inch margin and be sure any information you wish to include is within the scanable region.

- **Course Flexibility and Due Dates:** The course has been designed to provide students and their families the flexibility that homeschooling allows. However, learning mathematics requires more effort than many other endeavors, and there is a direct correlation between a student's success in mathematics and the student's regular participation and faithful completion of requirements. In general, each Lesson Folder corresponds to approximately one week's work to complete the course in a semester, and two week's work to complete it in an academic year. It is essential that students and their families determine a deadline for the final completion of the course and establish due dates for each lesson folder according to what works best for them. Students must then pace themselves to work methodically through the course materials and adhere to their deadlines in order to complete the course in a timely manner.

- **A Word About Cheating Yourself In This Math Course:** Keep in mind that the goal of this course is not to just jump through an educational hoop that costs you time, money and frustration but doesn't actually benefit you. Rather, it is to prepare you for success in later math and science courses where the skills you learn here are absolutely essential. Math is very cumulative and sequential, and my experience teaching math for over 30 years is that those who do not earnestly seek to understand the concepts by doing their own work only cheat themselves, and usually don't figure that out until much later when it is too late and too difficult to remedy. If you do your work honestly your grade will be an honest reflection of what you know going forward, and will also help guide you as make life decisions based on your unique gifts.

- **Grading Scale:**

A	90-100%	D	60-69%
B	80-89%	F	below 60%
C	70-79%		

Time and Effort Expectations

- Learning mathematics is no different than most anything else of significant lasting value—there is a cost involved to obtain it. Many students fall behind in their math courses simply because they don't expend the time and effort necessary for success. Depending upon the student skill and preparation, to complete this course in a semester will on average require 10-16 hours per week, and approximately half that each week for completion over an academic year. To be most effective, time should be allocated each day, preferably at the same time, and spent on task watching the lecture videos, taking notes, reading the textbook, doing the homework, reviewing previous material, and preparing for the exams. By keeping up with your work you will find that your daily efforts pay off in a level of understanding that allows you to face exams without worry or cramming. Remember that "yard by yard, math is hard, but inch by inch, math is a cinch"!

Organize Your Life:

- A large part of success not only in this math course but in any formal educational endeavor has to do with students' ability to effectively manage all aspects of their lives (family, work, recreation, finances, health, time, relationships, etc…) in such a way as to have in place the stable "infrastructure" upon which to build their education. Learning anything new, and especially mathematics, is hard work, perhaps harder than any job you will ever have. Students who are unsuccessful most often find it is not because they are incapable of learning the coursework, but because they have not adequately allowed for the extra time and effort from their normal routine that are required for success. It is therefore important that students and their families organize their lives to allow for the time and energy commitment necessary for the successful completion of this class and their educational goals.

Carpe Diem (Seize the Day):

- Students should also keep in mind that their formal education happens during a relatively short but important time of their lives. The time you invest now becoming proficient in important skills like mathematics will be rewarded throughout your life. On the other hand, the opportunities you have now for your education will diminish with time, and things that are easier for you to learn now in your youth will become more difficult. So "seize the day" by making the most of the opportunities you have while you have them.

The only difference between the successful person and everyone else is determination and persistence.
William J. O'Neil
Work Hard and You Will Succeed!

Tentative Course Schedule

(Print this Schedule For Reference Throughout the Course!)

NOTE: Each Lesson Folder corresponds to approximately one week's work to complete the course in a semester, and two week's work to complete it in an academic year. **Lesson folder due dates were emailed to students and parents upon enrollment, and those dates should be filled in on this sheet for reference throughout the course**.

"EOO" means "every other odd", i.e., 1,5,9, etc… Most assignments are for every other problem, but the goal is to learn the concepts, not just complete an assignment. Thus, students should do every odd problem as needed for topics with which they have greater difficulty. Alternatively, assignments marked *Every Odd Problem* are of particular importance and traditionally require extra practice; if extra practice is not needed, students are free to just do *Every Other Odd Problem*.

Lesson Folder	Due Dates	Sec	Class Topics	Assignment
			Introduction	Work through the Getting Started folder at the LMS. Use the link on the last page of the syllabus to provide your student information for the course to the instructor.
1		1.1	Fractions	EOO problem (every odd as needed)
		1.2	Exponents, Order of Operations	EOO problem (every odd as needed)
		1.3	Variables, Expressions, Equations	EOO problem (every odd as needed)
		1.4	Real Numbers	EOO problem (every odd as needed)
		1.5	Adding and Subtracting Real #'s	EOO problem (every odd as needed)
2		1.6	Multiplying and Dividing Real #'s	EOO problem (every odd as needed)
			Summary Exercises on Operations with Real Numbers	All odd problems.
		1.7	Properties of Real Numbers	EOO problem (every odd as needed)
		1.8	Simplifying Expressions	EOO problem (every odd as needed)
			Chapter 1 Review Exercises	**EOO problem (every odd as needed)**
			Chapter 1 Test	**Download From LMS and Complete**
3		2.1	Addition property of equality	EOO problem (every odd as needed)
		2.2	Multiplication property of equality	EOO problem (every odd as needed)
		2.3	Linear Equations	EOO problem (every odd for those with fractions and as needed)
			Summary Exercises on Solving Linear Equations	Every odd problem
		2.4	Intro to Applications of Linear Equations	Every odd problem
4		2.5	Formulas and Geometry	EOO problem (every odd as needed)
		2.6	Ratios and Proportions	EOO problem (every odd as needed)
		2.7	Applications of Linear Equations	Every odd problem
		2.8	Linear Inequalities	EOO problem (every odd as needed)
			Chapter 2 Review Exercises	**EOO problem (every odd as needed)**
			Chapter 2 Test	**Download From LMS and Complete**
5		3.1	The Rectangular Coordinate System	EOO problem (every odd as needed)
		3.2	Graphing Linear Equations in Two Variables	EOO problem (every odd as needed)
		3.3	The Slope of a Line	Every odd problem
		3.4	Writing and Graphing Equations of Lines	Every odd problem
			Summary Exercises on Linear Eqns and Graphs	Every odd problem
		3.5	Graphing Linear Inequalities in Two Variables	EOO problem (every odd as needed)
		3.6	Introduction to Functions	Every odd problem
6			**Chapter 3 Review Exercises**	**Every odd problem**
			Chapter 3 Test	**Download From LMS and Complete**
		4.1	Solve Linear Systems by Graphing	EOO problem (every odd as needed)
		4.2	Solve Linear Systems by Substitution	EOO problem (every odd as needed)
		4.3	Solve Linear Systems by Elimination	EOO problem (every odd as needed)
7			**Summary Exercises on Solving Linear Systems**	**EOO problem (every odd as needed)**
		4.4	Applications of Linear Systems	Every odd problem
		4.5	Solving Systems of Linear Inequalities	EOO problem (every odd as needed)
			Chapter 4 Review Exercises	**EOO problem (every odd as needed)**
			Chapter 4 Test	**Download From LMS and Complete**
			Chapters 1-4 Cumulative Review Exercises	**Every odd problem**
8		5.1	Exponents	Every odd problem
		5.2	Integer Exponents	Every odd problem
			Summary Exercises on Rules For Exponents	**Every odd problem**
		5.3	Scientific Notation	EOO problem (every odd as needed)
		5.4	Add and Subtract Polynomials	EOO problem (every odd as needed)
9		5.5	Multiply Polynomials	EOO problem (every odd for FOIL problems)
		5.6	Special Products	EOO problem (every odd for squaring binomials and finding the product of the sum and difference of terms)
		5.7	Dividing Polynomials	EOO problem (every odd as needed)
			Chapter 5 Review Exercises	**EOO problem (every odd as needed)**
			Chapter 5 Test	**Download From LMS and Complete**

10		6.1	Factoring the GCF and by Grouping	EOO problem (every odd as needed)
		6.2	Factoring Trinomials	Every odd problem
		6.3	Factoring Trinomials	Every odd problem
		6.4	Special Factoring Rules	Every odd problem
			Summary Exercises on Factoring	**EOO problem (every odd as needed)**
11		6.5	Solving Quadratics by Factoring	EOO problem (every odd as needed)
		6.6	Applications of Quadratic Equations	Every odd problem
			Chapter 6 Review Exercises	**EOO problem (every odd as needed)**
			Chapter 6 Test	**Download From LMS and Complete**
12		7.1	Rational Expressions	EOO problem (every odd as needed)
		7.2	Multiply and Divide Rational Exp.	EOO problem (every odd as needed)
		7.3	Least Common Denominators	EOO problem (every odd as needed)
		7.4	Add and Subtract Rational Exp.	Every odd problem
		7.5	Complex Fractions	Every odd problem
13		7.6	Solving Equations with Rational Exp.	EOO problem (every odd as needed)
			Summary Exercises on Rational Expressions	**Every odd problem**
		7.7	Applications of Rational Expressions	EOO problem (every odd as needed)
		7.8	Variation	EOO problem (every odd as needed)
			Chapter 7 Review Exercises	**EOO problem (every odd as needed)**
			Chapter 7 Test	**Download From LMS and Complete**
14		8.1	Evaluating Roots	EOO problem (every odd as needed)
		8.2	Multiply, Divide, Simplify Radicals	Every odd problem
		8.3	Add and Subtract Radicals	EOO problem (every odd as needed)
		8.4	Rationalize Denominator	EOO problem (every odd as needed)
		8.5	Simplify Radicals	EOO problem (every odd as needed)
15			**Summary Exercises on Radicals**	**Every odd problem**
		8.6	Solve Equations with Radicals	EOO problem (every odd as needed)
		8.7	Rational Exponents	EOO problem (every odd as needed)
			Chapter 8 Review Exercises	**EOO problem (every odd as needed)**
			Chapter 8 Test	**Download From LMS and Complete**
16			**Final Exam Review**	**Download From LMS and Complete**
			FINAL EXAM	**Download From LMS and Complete**

Do not worry about your difficulties in mathematics. I assure you that mine are still greater.
Albert Einstein

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