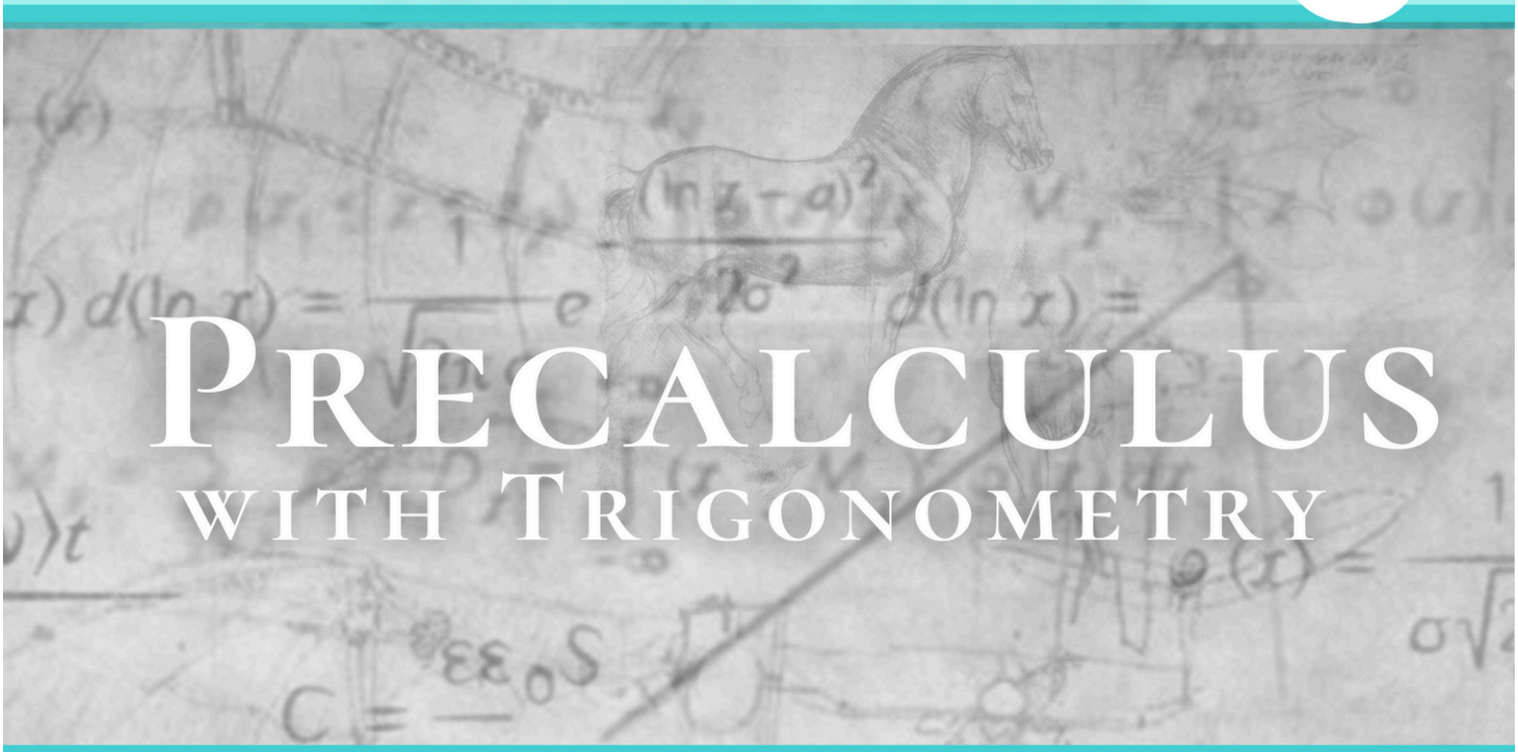
SHORMANN MATHEMATICS

TEACHER GUIDE

PDF



PRECALCULUS
WITH TRIGONOMETRY

DAVID SHORMANN, PHD

DIVE

Parents: Course Setup & Login

While the instruction, grading, and Q&A support are provided, a parent or teacher should supervise to ensure the student follows the course instructions. Don't worry, you don't need to know anything about math! Simply follow these steps:

1. Please watch with your student: Getting Started

2. **CRITICAL**: Read Parent Responsibilities & How to Check Student Work

3. Decide: Hybrid Offline Method for Practice Sets

4. To ensure your device is setup for our eLearning system, please follow the: Computer & Device Setup Instructions

5. Print and read these Instruction Sheets:

   - Reading Assignment Instruction Sheet
   - Note-Taking Instruction Sheet
   - Practice Set Instruction Sheet
   - Quiz Instruction Sheet
   - Study for Exams Instruction Sheet

6. Read: The Timed Method

7. Saxon Algebra 2 Users: Optional Geometry Prep Lessons for Shormann Precalculus

8. Required Materials:

   - Select one: Geometry App or a Ruler & Drawing Compass
   - Select a Recommended Calculator
   - 2-inch binder and 3-hole paper (blank or college-ruled)
     OR a spiral notebook for lectures/corrections and copy paper for homework
   - Small spiral notebook (4x6) for formulas
   - Computer or tablet with Internet access and headphones or speakers

9. After you receive the login email, follow the steps under **PARENTS** to continue setting up the course. To find out when your login email will be sent, see: eCampus

10. There is no separate parent login. Parents use the same login the student uses. Learn More.

Important Resources

Grade Changes and Resets

Ask Dr. Shormann a Homework, Test, or Quiz Question

Contact Tech Support

NCAA

Advanced Placement

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Teacher Guide

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Shormann Math combines tried and true teaching methods with 21st Century technology. It is a user-friendly course with video lectures, interactive homework, automated grading, grade recording, video solutions, and Q&A email support.

Shormann Algebra 1 and 2 integrate 1 full credit of geometry. When finished with both, one full credit of algebra 1, 2, and geometry are earned! All the concepts required for a variety of standardized tests, including the redesigned PSAT and SAT, the ACT, and the CLEP College Algebra and College Mathematics exams, are taught then continually reviewed, developing fluency and raising test scores.

After completing Shormann Precalculus, students can spend 2-3 weeks using the included CLEP Professor Precalculus, a short prep course that specifically prepares for the CLEP exam. A passing score on this exam can earn up to 3 college credits.

My primary goal is to teach students how math connects to their world and their Creator. I do this by teaching math as the language of science and a tool for understanding God and the world He created. In so doing, I pray that our courses will strengthen the student's relationship with Christ in ways that will help them be productive members of society who seek to glorify God in all they do!

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Credits

1 Precalculus with Trigonometry Credit

Up to 3 CLEP Precalculus Credits**

Students who took Saxon Algebra 2 (2nd or 3rd Edition) followed by Shormann Precalculus also earn 1/2 Geometry Credit*

Student Completed only 1/2 of a Geometry Course followed by Shormann Precalculus also earn 1/2 credit of Geometry*

How is 1/2 credit of Geometry earned in Shormann Precalculus?

Shormann Precalculus includes all the geometry concepts required to earn the second 1/2 credit of Geometry. If only **1/2 credit of Geometry** was earned prior to taking Precalculus, the remaining 1/2 credit of Geometry & 1 credit is earned in Shormann Precalculus.

Why can't I list 1/2 credit of Geometry for Shormann Precalculus?

If one full credit of Geometry is earned prior to taking Shormann Precalculus, the geometry lessons in Precalculus are considered review. It is improper to list more than 1 credit of Geometry on your transcript.

Pre-Requisites

Any of the below:

- Shormann Algebra 2
- Saxon Algebra 2
- Any Publisher's Algebra 2 and Geometry Course

REQUIRED: Read Placement Info & Tests

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Course Description

Shormann Precalculus provides a comprehensive teaching of standard precalculus topics, with a special emphasis on advanced algebra and trigonometry topics found on the CLEP Precalculus Exam. Functions are a priority, with both standard and real-world applications of the following types: linear, quadratic, cubic, polynomial, rational, exponential, logarithmic, absolute value, trigonometric and piecewise-defined. Students learn to work with functions presented in graphic, symbolic, verbal and numeric form. Calculus fundamentals are also presented and practiced, which improves student confidence and success in college-level Calculus I. Along with the included *CLEP Professor* course, Shormann Precalculus provides specific preparation for the CLEP Precalculus exam.
When can I take a CLEP exam

Honors or Standard Course Options

Students who complete the course in a typical school year or less and use the Honors Grade Scale can list it as an honors course on their transcript. Or, if the student earns a score of 50 or higher on the **CLEP Precalculus Exam** (use CLEP Prep Course) Shormann Precalculus can be listed as an honors course.

Honors Grade Scale	Standard Grade Scale
A – 93-100	A – 90 -100
B –84 – 92	B –80 – 89
C – 74 – 83	C – 70 – 79
D – 65 – 73	D – 60 – 69
F – 64 or below	F – 59 or below
I – Incomplete	I – Incomplete

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Using Shormann Math in a Classroom or Co-op

The beta-test of Shormann Algebra 1 was performed with students in a weekly live online classroom. While we haven't used it yet in a daily classroom setting, we do know it works well in a homeschool co-op style class that meets weekly. Students complete their daily lessons at home, and come to class to ask questions, review the lessons covered that week, and turn in handwritten work + lecture notes. They can then take the online quiz, or take a different one administered by the teacher. At the end of each quarter, they can take the online quarterly exam, or take a different one administered by the teacher. For more information on starting a co-op class in your area, contact support@diveintomath.com.

Standardized Test Prep

The main purpose of *Shormann Math* is to help students use math to become more creative like their Creator, glorifying Him and serving others. However, it also provides excellent preparation for standardized tests. Although all the topics required to excel on college entrance exams are taught in Shormann Algebra 2, Shormann Precalculus provides ample review of these concepts to ensure students maintain the fluency required to excel on these exams. PSAT, SAT, and ACT Test Prep Recommendations

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Parent Responsibilities

While the eLearning course provides all the instruction and grading, it is the parent's responsibility to check their student's work to ensure the student is using the course as directed and to supervise students during the 4 exams. Please follow these steps after each lesson is completed: How to Check Student Work

RECOMMENDED: Hybrid Offline Method for Practice Sets

Students use the PDF of the textbook to complete the Practice Sets on paper, then login to the eLearning system to enter their answers for grading and grade recording. For details, see: Hybrid Offline Method

Scheduling

Shormann Precalculus is set up on a 30 week schedule. Since a normal school year is generally 36 weeks, there are six additional weeks that can be used, as needed, to relearn a forgotten concept or grasp a new concept. A good way to ensure the student has time to re-learn, as needed, is to use the timed method (below).

Fluency = Accuracy + Speed

Math is a language. It is the language of science, a tool used to discover, analyze, and understand God and the world He created. Like reading or speaking a language, fluency is required to use math to communicate and learn. While the main focus of most math curricula is simply accuracy, fluency goes a step further, continuing to practice the skill for a long period of time, developing fluency.. Like reading, math fluency is required to fully understand and apply it to new situations like science or questions on a standardized test.

Timed Method: Frustration Free Math

Instead of requiring the student to complete a lesson each day, have Algebra 1 students work on math for no more than an hour to an hour and a half per day. At the end of this time, regardless of how much of the lesson is completed, stop the lesson and have them pick-up where they left off the next day. Strong math students can work on math at least 4 days per week and struggling or reluctant math students should work on math 5 days per week.

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This allows the student to learn at their own pace, giving them the extra time needed to grasp a new concept or relearn forgotten concepts by rewatching video lessons, studying the help links, etc. On the other hand, when a student is required to complete a lesson per day, they quickly realize that going back and relearning can make the lesson take too long and they will likely skip this critical step. I cannot overemphasize the importance of relearning in the process of developing fluency (speed and accuracy). As fluency develops, the student will complete more and more of the lesson each day. Frustration Free Learning

The Timed Method: The key to developing mastery and fluency.

The timed method is part of an efficient system Dr. Shormann created while teaching Saxon Math to hundreds of thousands of homeschool students over the past 20 years. This system is designed to ensure all students succeed in math by allowing them to **learn at their own pace**. It is widely accepted that students who learn at their own pace achieve higher levels of learning, building mastery and fluency without frustrating or overwhelming them. While strong math students will go further, often completing Calculus in 11th grade, average or remedial math students may take longer and only complete Algebra 2 or Precalculus in high school. That's okay! The important thing is that they understand what they have learned. However, we often see reluctant or struggling math students who use the timed method become very strong math students.

If I use the timed method, how will my student finish on time?

The timed method usually has the opposite effect of what parents expect. Once the student knows that they only have to work on math for the specified amount of time, they are free to focus on learning instead of wondering, "how long is this going to take?". If they are stuck on a problem, they are more likely to relearn by watching the linked video lecture because they know that no matter how many times they do this, it will not make their math lesson longer. It may take a few weeks, but as they start to build mastery and then fluency, learning math will become faster and easier. Keep in mind, Shormann Algebra 1 & Algebra 2 each earn 1.5 credits. Therefore, students can take up to three semesters to complete each course. Learn more.

Three Semester Option

If the student is using Precalculus to earn ½ credit of geometry (see page 4) it can be used as a three semester course. All other students should use it as a one year

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course. Each eLearning subscription is good for 24 months so every student can successfully complete the course. Instead of scheduling the lessons over 3 semesters, use the Timed Method to allow the student to learn at their own pace.

Earn 14 College Credits

Shormann Algebra 2, Precalculus, and Calculus provide specific preparation for select CLEP and AP exams. If a passing score is earned on these exams, an additional high school math credit can be listed on the high school transcript.

Don't Expect Immediate Mastery

I strongly discourage incorporating "immediate mastery" methods into Shormann Math (Saxon Math, too!). For example, some parents and teachers will not let the student progress to the next lesson unless they have completely mastered the current lesson. This can cause discouragement and exasperation.

Just like in sports or music, it takes time to learn a skill. Most students need to practice a skill over several days before mastery is achieved. That's why the Practice Sets review previous concepts over a long period of time. So, please use the system like it was designed, and give your student time to patiently practice and build their skills!

Focus on Fluency

Fluency means speed and accuracy. The only way to develop fluency is by practicing the skill correctly over a long period of time. Think of a baseball pitcher or a concert pianist. How many times do they practice the same pitch or piece? How many times do they do it wrong while they are learning? Don't be surprised when your child gets the same problem wrong multiple times while they are learning. The key is to re-learn the concept and try again.

Conversely, giving the solution before relearning will erode mastery. So instead of "helping" or letting the student see the answer, encourage students to relearn by using the links above each Practice Set question. There is a link to a similar example problem and a link to the video lecture that teaches that concept. In the beginning this process may be slow and laborious. Be patient, use the timed method, and eventually math will be faster and easier.

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Course Components

I. **Lessons:** A daily lesson consists of 3 parts:

- **Reading Assignments (Rules and Definitions):** Instruction Sheet
- **Video Lecture:** Instructions for Lectures
- **Practice Set:** Practice Set Instructions

II. **Quizzes:** Quiz Instruction Sheet

III. **Quarterly Exams:** Quarterly Exams Instruction Sheet

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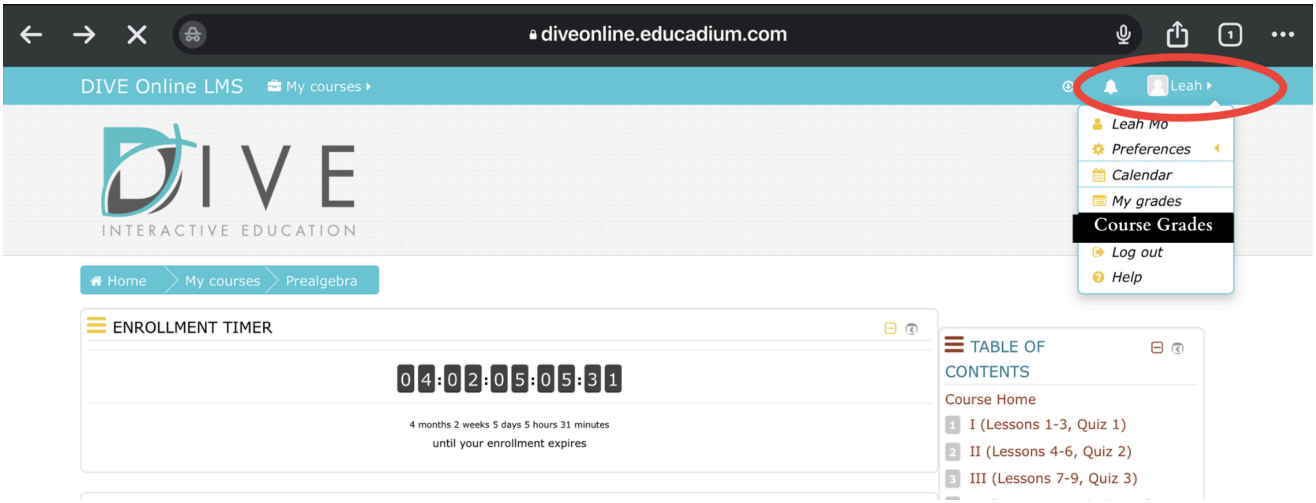
Online Grade Book & Grading

Note: If your student has a learning disability or you are not using the course as instructed (skipping assignments, giving more time on exams, etc.), see the Learning Disabilities section below.

1. Login using the same login as the student, select “My Courses” in the top menu, then select the course title. In the top right corner, select the student’s name, then “Course Grades”.



2. The grade book will open.

Grade Book: Joe Smith

Your Student's Grades — *Average Grade of All Students in this Course*

Assignments	Grade	Percentage	Class Average
Grading Shormann Prealgebra			
Lesson 1 Practice Set	90.00	90.00 %	86.95
Lesson 2 Practice Set	85.00	85.00 %	84.59
Lesson 3 Practice Set	95.00	95.00 %	91.60
Quiz 1(Lessons 1-3)	10.00	100.00 %	9.71
Lesson 4 Practice Set	90.00	90.00 %	93.36
Lesson 5 Practice Set	97.50	97.50 %	94.04
Lesson 6 Practice Set	92.50	92.50 %	91.64
Quiz 2(Lessons 4-6)			

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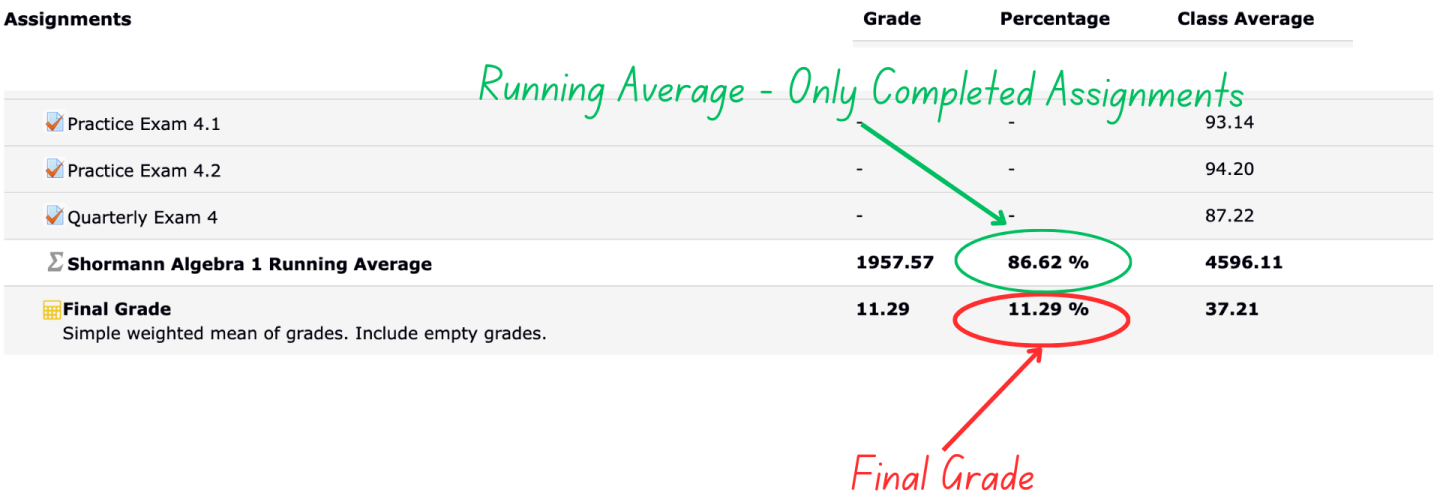
Grade: This is your student's grade in points.

Percentage: This is your student's grade as a percentage.

Class Average: This is **NOT** your student's grade. It's the average grade of ALL the students who have taken this assignment.

Running Average:

Scroll down to the bottom of the grade book and find the Running Average. This is the grade for all the assignments that have been completed so far. It does not include the zero for assignments that have not been completed. So, as long as the student has not skipped any assignments, this is where you would see the student's current grade based on the assignments they have completed.



Final Grade:

This is the grade used at the end of the course for the final grade. It includes the zeros for assignments that were not completed. In this example, only a few of the assignments have been completed so the final grade is very low. At the end of the course, if all assignments are completed, the Final Grade and Running Average are the same. If they are not, see the solutions below.

Add Extra Credit to the Final Grade

For details, see "Optional Extra Credit" below.

Transcripts & Credits

For a free transcript template and detailed instructions, see Transcripts & Credits

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ISSUES WITH THE GRADE BOOK

Issue 1: Final Grade and Running Average Are Not the Same

This means one or more assignments were not completed. Scroll through the grade book and look for assignments in the "Percentage" column that don't have a grade. See the next section to resolve this issue.

Issue 2: No Grade in the Percentage Column

1. Select the title of the assignment in the Grade Book.
2. If there is a button that says "Continue Last Attempt", this means the student opened and/or started the assignment but did click Submit All & Finish. Select the "Continue Last Attempt" button, "Finish Attempt" then, "Submit All & Finish".
3. If there is a "Start Quiz" button, this means the student did not start the assignment. You can either leave it as a 0 or have the student do the assignment, which will raise the final grade.

Grade Weights

The following describes how the grades are “weighted”.

Practice Sets & Practice Exams: 30%
Weekly Quizzes: 30%
Quarterly Exams: 40%

Optional: Add Extra Credit

Keep in mind, as the parent and/or teacher, you are responsible for assigning grades. Our grading system is a tool to help you. You are not required to use the grades in the eLearning grade book or follow any of our recommendations. Use the course like you would any other curriculum, like Abeka or Bob Jones.

If your student corrected missed problems for all assignments, extra credit can be added at the end of the course by following the option below. However, this is optional because the eLearning system already includes some extra credit by allowing students to take the exams twice and averaging the scores which is like adding up to 10 points to each exam grade.

Option 1: Add up to 3 points to the Final Grade in the Grade Book. (The final grade should not be more than 100.)

Option 2: Use the “Simplified Grading Method” below.

This extra credit cannot be added to the grade book. Simply add the points to your student’s final grade, then put the new grade on the Certificate of Completion (see below).

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Certificate of Completion

Upon course completion, a certificate of achievement can be printed. Go to the Course Home page, scroll down the left menu, then click ***Certificate***. There are detailed instructions on how to save, edit, and print the certificate.

Learning Disabilities: How to Modify the Timed Quizzes and Exams

While we cannot change the timer on the exams or quizzes, you can give the student more time by following these steps. However, you will need to manually record grades or use the "Simplified Grading Method" (see above) instead of using the online grade book.

Quizzes: How to Modify the Time

Parent Supervision Required: After the first attempt, the Results Page with all the answers is displayed. Quizzes have a 20 minute time limit and four questions. To double the time to 40 minutes, follow these steps:

1. The student should study using the Study Instructions just above the link to the quiz.
2. Have the student take the quiz twice. In the first attempt, complete only the first two questions. In the second attempt, complete the last two questions.
3. Add the two scores together.
4. Have the student correct missed problems by following the Quiz Instructions linked above the quiz.
5. Use the "Simplified Grading Method" below.

Exams: How to Modify the Time

Parent Supervision Required: The exams are limited to one hour. This method doubles the time to two hours.

1. Study using the Study Instructions linked just above the exam.
2. Have the student take the exam twice. In the first attempt, complete only the first half of the exam. In the second attempt, complete the second half. This gives the student 2 hours to complete the exam.
3. Add the two scores together.
4. Have the student correct all missed problems on paper. If they correct all missed problems, **add 100 points to their grade.** Then, divide it by two. This is the equivalent of giving them two full attempts and averaging the scores.
5. For grade recording and calculating a final grade, see the next section below.

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Grading for Learning Challenged Students

Because students with learning challenges often require many accommodations, instead of using the grades in the eLearning course and submitting multiple grade change requests, manually record the four exams, then use the Simplified Grading Method to calculate the final grade.

Simplified Grading Method

If you allow your student to skip assignments, modify the time for learning disabilities, etc, the online grade book will not accurately calculate a final grade. Instead, use this simple method to give a completion grade of 90 for all Facts Practice, Quizzes, Practice Sets. This way, you don't need to submit multiple grade change requests or manually record all the scores. All you need is the average of the four exam grades to put in the formula below. This new grade can be added to the Certificate.

Exam Average: Add the exam grades and divide by 4.
Final Grade = **Exam Average (.40) + 54**
For Example: If the exam average is a 70, it would be: 70 (.40) + 54 = 82

To use a different completion grade for the Practice Sets and Quizzes, use this formula:
Final Grade = Exam Average (.40) + Completion Grade (.60)

To calculate an exact score manually, record all the grades, then use this formula:

Exam Avg. (.40) + Quiz Avg. (.30) + Practice Set Avg. (.30)

You can also request a grade change for each assignment by using the "Request A Grade Change Form" on the Course Home page.

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Results of Former Students

Why do results matter?

Shormann Math builds on a solid foundation of time-tested teaching methods, including the incremental development + continual review format pioneered by John Saxon(1923-1996). And not just Saxon's teaching methods, but his teaching thoughts as well, including his thought that "Results, not methodology, should be the basis of curriculum decisions."

One of the primary reasons John Saxon developed his math curriculum in the 1980s was because new ways of teaching math were not working. Math "educrats" at the time were promoting their untested "visions" of math teaching. But with 3 engineering degrees, John was a math user before he became a math teacher. Not only that, he was a test pilot. If anyone knew the extreme value and importance of testing a new product, it was John!

Results matter because they reveal whether or not a new product really works. And while statistics certainly don't reveal everything about a new product, they can certainly reveal many things. **Most publishers don't provide any details of student performance.** Shormann Math is different, and we are thrilled we can provide the public with the following statistics to help you make informed decisions.

Overall performance (Algebra 1)

Overall Average	**90.3%**
Range(lowest to highest)	**81.0-97.9%**
% Students making an A(90%+)	**67%**

Discussion: The average student in our beta test made an A in the class! Because each new Shormann Math course is beta-tested in a live online class setting, Dr. Shormann gets to know the students on more than just a "numbers only" basis. And we all know that God doesn't make clones, so the fact that not every student performed the same should not be a surprise. Natural talent definitely matters, but so do things like attitude and maturity. Dr. Shormann spends time during the video lectures encouraging students to develop fruits like patience and self-control (Galatians 5:22-23), as well as persevering with joy (James 1:2-3), and gratefulness (I Thessalonians 5:18).

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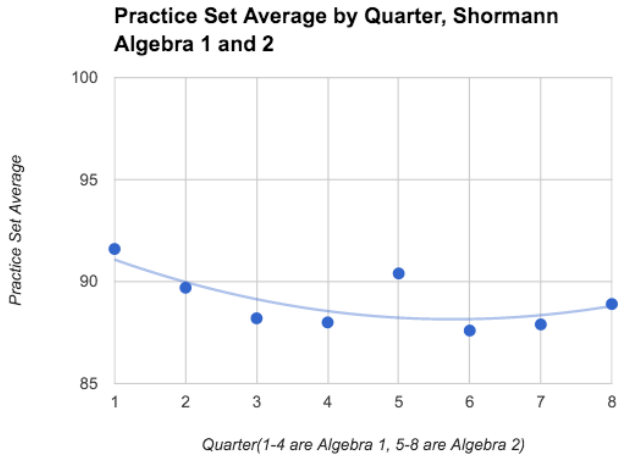
Practice Sets



Discussion: You've probably never seen statistics on student performance in a math class before, which is why it is important to discuss the data! We had hoped the average student would achieve a Practice Set average above 85%, and that was achieved in all 8 quarters! 85% is a good cutoff for determining whether students are understanding, and retaining most of the concepts learned.

Note also the high first quarter average in both Algebra 1 (Quarter 1) and Algebra 2(Quarter 5). Because Shormann Math is built on John Saxon's method of integrating geometry and algebra, students using Saxon Math 8/7 or Saxon Algebra ½ will be most comfortable starting Shormann Algebra 1. However, not all beta-test students used Saxon previously, and not all Shormann Algebra 2 students used Shormann Algebra 1(most used Saxon). Therefore, the high first quarter averages are a good indication that students who successfully completed any pre-algebra course should do just fine in Shormann Math, and non-Shormann Math Algebra 1 students can succeed in Shormann Algebra 2.

Finally, in the trendline shown, notice the dip in the middle of both courses. This seems like a natural pattern if you consider the facts that, during this time,

1. Young students are being exposed to new and increasingly complex concepts.
2. As time progresses, students mature and begin to learn what it takes to study, and retain, increasingly complex concepts.
3. Becoming proficient at a subject takes time, so don't quit too soon if it seems challenging! Completing Shormann Algebra 1 and 2 also includes a geometry credit, so if you are doing the self-paced option, it's perfectly fine to spread this out over 12 quarters (3 years) instead of 2.

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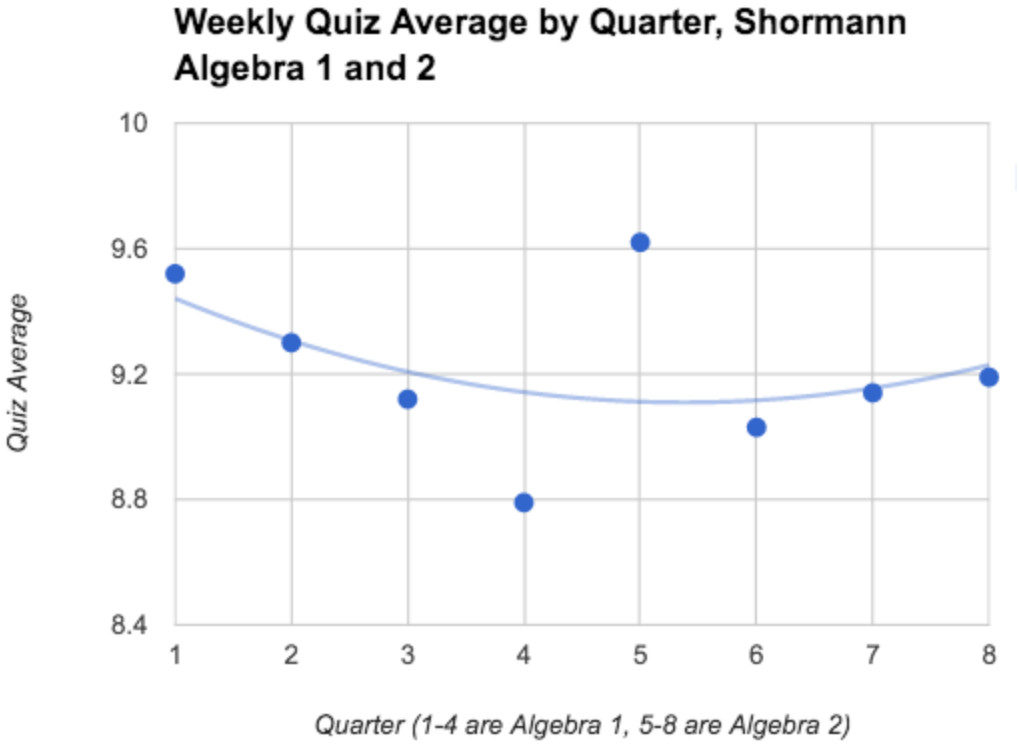
Weekly Quizzes



Discussion: Weekly Quizzes show a similar trend to the Practice Sets, which affirms what we discussed in 1-3 above. A score of 8 out of 10 or higher is a good indication of whether students understood the lessons covered that week. We are pleased that scores were well above this in all eight quarters!

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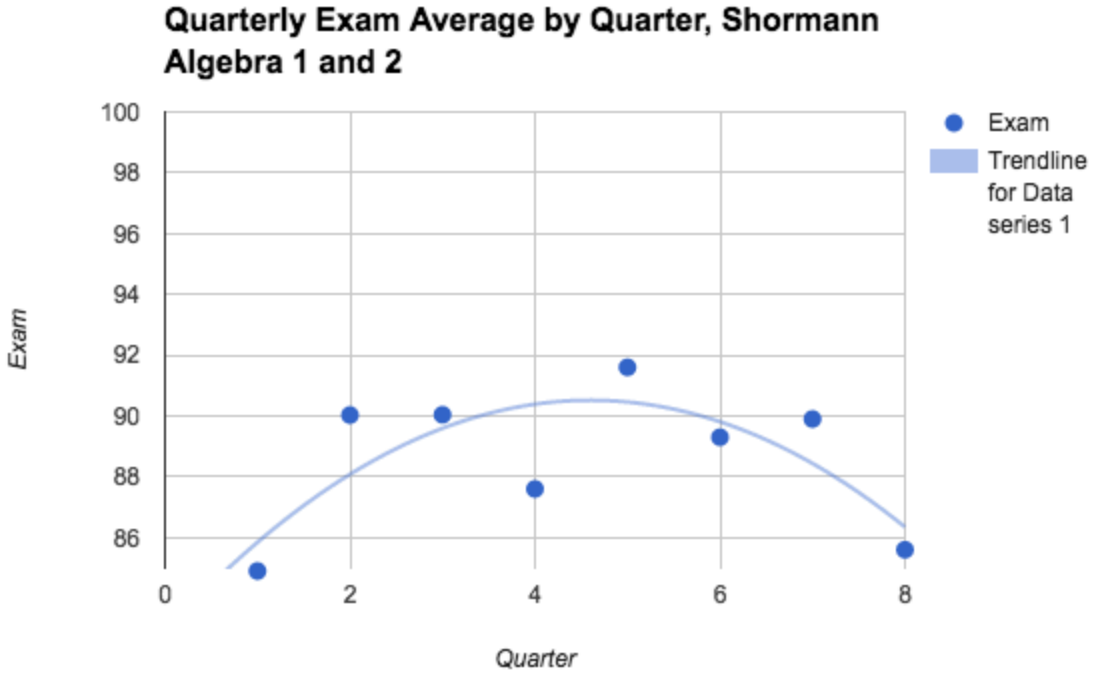
Quarterly Exams



Discussion: The trend for quarterly exams is not the same for Practice Sets and Weekly Quizzes, as the trend is for maximum scores in the 5th Quarter, which is the introductory quarter of Algebra 2. One of the big reasons for this trend has to do with not giving the students enough practice prior to Quarterly Exam 1 in Algebra 1. This is one reason we beta-tested the course prior to releasing it to the general public, so we could make any adjustments we believed were necessary. After Exam 1, we started providing students with two practice exams, and afterwards, all quarterly exam averages improved.

Another big reason for the trend is that not all students took advantage of the practice exams, and/or did not follow instructions for studying. On the week of a quarterly exam, students are given study tips. **The main thing students need to do is practice, as there is simply no substitute to success in mathematics, or pretty much anything else you want to be good at, than to practice. A lot.**

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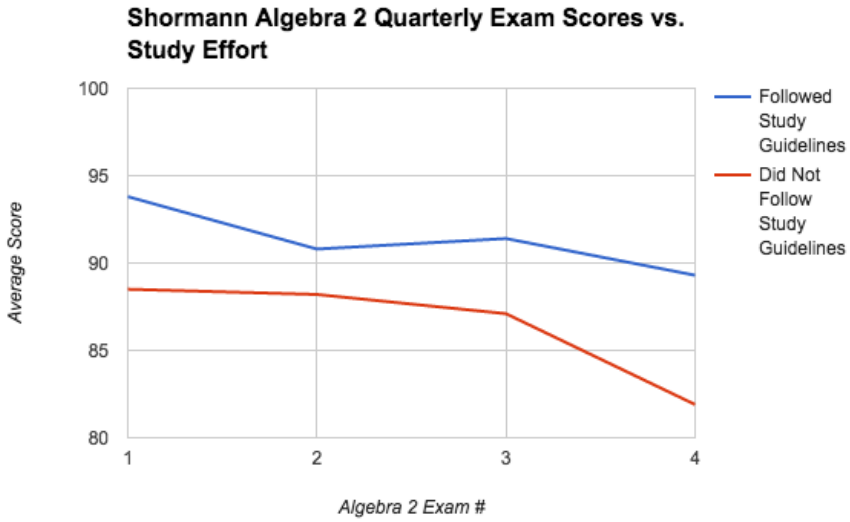
Two key steps in properly studying include 1) retake all Weekly Quizzes and 2) complete both Practice Exams. Because our eLearning campus provides detailed information on each student's Quiz and Practice Exam attempts, I was able to determine which students studied properly (completed both 1) and 2) above) from those who did not (completed either 1) or 2) or neither). Results are shown below for the beta-test students in Shormann Algebra 2.



The conclusion from the above graph is obvious: students who study harder do better in Shormann Math! Students who followed the study guidelines averaged at or well above 90% (A), while students who did not follow the guidelines averaged below 90% (B). The results also show that Shormann Math is providing the tools students need to become fluent in mathematics.

Finally, 85%+ is an indicator of good retention and understanding of concepts covered in a quarter. For all 8 quarters, student averages shown in the Quarterly Exam Average by Quarter chart were at, or well above 85%. Because of Shormann Math's format of continual review, we are basically asking students to be responsible for "all their math, all the time." These results show that on average, students in the beta courses responded very well!

Keep in mind, too, that these students did the "high performance level" version of Shormann Math, where the course is completed in 30 weeks (37 weeks if you count the breaks), and they did not have as much time to complete the quizzes or quarterly exams. In the standard course, students have 5 extra minutes per quiz, and 15 minutes extra on quarterly exams. You also receive a 2-year subscription per course, almost 3 times more time than beta-test students were allowed.

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Scope & Sequence

Shormann Precalculus

To jump to the sequence: Course Sequence

Scope

Number
Defining Mathematics
History of Number
Permutations and Combinations
Operations with whole number exponents
Operations with fractional exponents
Operations with scientific notation
Logarithm means exponent
Subsets of Real Numbers
Union and intersection of sets
Complex numbers
Operations with complex numbers
Subsets, disjoint sets, equivalent sets
Sets and Venn (Euler) diagrams
Sets and Cartesian product
Absolute value and order
Counting problems, including permutations and combinations
Special number types, including binary
Ratio (including proportional relationships)
Rational and irrational numbers
Rational and radical equations
Logarithms as "ratio numbers"
Direct and inverse variation
Product rule for logarithms
Quotient rule for logarithms
Power rule for logarithms
Proportion and the Christian adventure
Ratio word problems
Simplifying complex fractions
Algebra (including algebra of functions)
History of Algebra

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Algebra fundamentals review
Special Polynomials
Combined operations with algebraic expressions
Combined operations with logarithms
Completing the square
Quadratic formula
Modeling functions numerically
Modeling functions symbolically
Modeling functions verbally
Finding domain and range from functions
Operations with functions
Evaluating functions, including nonstandard forms
Composite functions
Symbolic and verbal (tabular) representation of functions
Symbolic and verbal (tabular) transformation of functions
Operations with polynomials
Operations with exponents
Operations with logarithms
Linear equations
Quadratic equations
Absolute Value equations
Polynomial equations
Polynomial division
Synthetic division and the remainder theorem
Synthetic division and the factor theorem
Rational equations
Radical equations
Exponential equations
Logarithmic equations
Linear inequalities
Quadratic inequalities
Absolute value inequalities
Linear systems of equations
Non-linear systems of equations
Word problems and systems of equations(value, uniform motion, etc.)
Partial fractions

Geometry (Including Logic)

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History of Geometry
Geometry Fundamentals Review
Coordinate geometry
Distance, midpoint
Properties of parallelograms and trapezoids
3-dimensional geometry
Geometry in art and creation
Geometry in 3D design
Euclid, axioms and postulates
Euclid, theorems, proofs
Triangle similarity
Triangle congruency
Triangle proofs
Circle relationships
Circle proofs
Construction
Non-Euclidean Geometry
Pythagorean theorem
Logic fundamentals
Syllogisms
Truth tables
Conjunctions, disjunctions, implications, and negations
Conditional statements
Necessary and sufficient conditions
Converse, inverse, and contrapositive
Hypotheses, conclusions, and counterexamples
Analytical Geometry (including graphical forms of functions)
History of Analytical Geometry
Analytical geometry fundamentals review
Rectangular Coordinate System
Linear equations
Linear inequalities
Nonlinear inequalities
Creating exp. and log. equations from word problems
Functions and relations
Modeling functions graphically
Finding domain and range from graphs

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Finding x-intercepts (roots) of polynomial functions (equations), with and without a graphing calculator
Finding extrema from graphs (with and without graphing calculator)
Finding poles (asymptotes)and zeros
Finding inverse functions
Graphing functions
Complex roots
Applications from algebra and geometry
Conics, including parabolas, circles, ellipses and hyperbolas
Even and odd functions
Inverse functions
Graphical representation of functions, including linear, nonlinear, and piecewise defined
Graphical transformation of functions, including linear, nonlinear, and piecewise defined
Linear functions as models
Nonlinear functions as models
Linear system word problems (graphical forms)
Nonlinear system word problems, with and without graphing calculator
Nonlinear systems of inequalities (graphical forms)
Measurement
History of measurement
Why standards matter
Rate conversions
Length conversions
Area conversions
Volume conversions
Currency (money) conversions
Special conversions, like finding cost per part
Perimeter, area, surface area and volume
Chemical mixture problems
Gas law problems
Interest rate, savings, and debt, and what the Bible has to say about it
Trigonometry
Trigonometry and right triangle basics
Trigonometry and Unit Circle Basics
Inverse trig functions
Reciprocal trig functions
Composite trig functions
Products of complex numbers

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DeMoivre's theorem, Euler's formula, and complex roots
Parallelogram law
Polar coordinates and conversion to rectangular, and vice-versa
Vectors
Resultant vectors
Resultant vectors, force applications
Trigonometric equations
Graphing Trig functions
Transformations of Trig functions
Basic Trig. Identities
Law of Sines
Law of Cosines
Sum and Difference Trig. Identities
Half and double angle trig identities
Periodicity
Periodic and other Trig functions with a calculator
Periodic and other Trig functions without a calculator
Non-periodic functions
Trig functions as models(finding height of an object, damping functions, etc.)
Using Trig to find area of inscribed regular polygons and connection to finding integrals
Pythagorean theorem applications
Calculus
History of Calculus
To understand calculus, just believe
Limits of simple continuous and discontinuous functions
Limits of rational polynomial functions
Infinity as a limit
Special limits
Limit definitions of fundamental derivatives
Limit definition of an integral
Calculus is about rates of change
Derivative means slope
Derivatives of polynomials, especially x^2
Using derivatives to find equations of tangent lines
Derivative applications, including finding extrema
2nd derivative
Derivatives of sums and differences

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Product and quotient rules for derivatives
Chain Rule for derivatives
Related rates
Integrals I (integrals as area under a curve)
Integrals II (summing area under curve using upper rectangles; f(x) times delta x)
Integrals III (definite integrals; f(x) times dx)
Integrals IV (antiderivatives)
Fundamental theorem of calculus
Statistics
Counting problems, including permutations and combinations
Computation of probabilities of simple and compound events
Simple conditional probability
One-variable data and the normal distribution, histograms
Mean, median, mode and range
Standard deviation and variance
Data interpretation and representation: tables; bar, line, circle graphs; pie charts, scatterplots, histograms
linear regression, including the least squares algorithm
nonlinear regression
Student's t-test
Computer Mathematics (see also Logic in Geometry section)
Pixels, bits, and the binary numeral system
Sequences
Series
Infinite Series
Resolving fractions into infinite series
Deriving formulas for infinite series
Sums
Factorials
Pascal's triangle
Binomial Theorem
Matrices, finding determinants and operations
Cramer's rule
Boolean algebra
Recurrence problems

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Shormann Precalculus with Trigonometry

Course Sequence

NOTE: To build a firm foundation, Lessons 1-25 introduce fundamental rules and definitions covered in Shormann Precalculus, plus a review of Shormann Algebra 2 with Integrated Geometry.

Lesson 1 Number I: What is Mathematics? - A Brief History of Number - Number Sets and Set Notation - Special Number Types, Exponents

Lesson 2 Ratio I: Ratio, Proportion, and the Christian Adventure - Rational and Irrational Numbers - Simplifying Fractions - Logarithms (Ratio Numbers) - Ratio Word Problems

Lesson 3 Algebra I: Expanding - Factoring and Canceling - Exponents - Logarithms

Lesson 4 Algebra II: Linear Equations - Systems of Linear Equations - Rational Equations

Week 1 Quiz

Lesson 5 Algebra III: Quadratic Equations - Absolute Value Equations - Radical Equations (Square Root) - Exponential Equations - Logarithmic Equations

Lesson 6 Geometry I: Geometry Fundamentals - Similar Triangles - Geometry in Art and Creation - Geometry in 3D Design

Lesson 7 Geometry II: Logic Fundamentals - Proof - Syllogisms - Truth Tables

Lesson 8 Geometry III: Coordinate Geometry - Circle Relationships - Circle Proofs - Non-Euclidean Geometry

Week 2 Quiz

Lesson 9 Analytical Geometry I: Identifying Functions - Evaluating Functions - Operations with Functions - Domain and Range

Lesson 10 Analytical Geometry II: Linear Inequalities - Linear System Word Problems

Lesson 11 Analytical Geometry III: Nonlinear Systems - Nonlinear Inequalities - Nonlinear System Word Problems

Lesson 12 Analytical Geometry IV: Identifying Conic Sections - Conics and Nonlinear Systems - Nonlinear Systems of Inequalities

Week 3 Quiz

Lesson 13 Analytical Geometry V: Piecewise Functions - Domain, Range, and Extrema from Graphs - Conic/Conic Systems

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Lesson 14 Measurement I: Why Standards Matter - Unit Conversions - Rate Conversions and Other Conversions - Arc Lengths and Sectors

Lesson 15 Measurement II: Length, Area, and Volume Conversions - Perimeter, Area, Surface Area, and Volume - Special Volume Conversions

Lesson 16 Trigonometry I: Trigonometry Basics - Inverse Trig Functions - Graphing Trig Functions

Week 4 Quiz

Lesson 17 Trigonometry II: Periodicity and Unit Circles - Rectangular to Polar Coordinates - Polar to Rectangular Coordinates - The Parallelogram Law and Resultant Vectors

Lesson 18 Trigonometry III: Basic Trig Identities - Pythagorean Theorem Applications - Other Right Triangle Applications

Lesson 19 Calculus I: To Understand Calculus, Just Believe - Limits

Week 5 Quiz

Lesson 20 Calculus II: Calculus is About Rates of Change - Derivative Means Slope - Derivative of f(x) = x^2

Lesson 21 Calculus III: More on Limits - Derivative Applications - The Integral

Lesson 22 Statistics I: The Normal Distribution - Measures of Central Tendency - Probability

Week 6 Quiz

Lesson 23 Statistics II: The Least Squares Algorithm for Linear Regressions - The Fundamental Counting Principle and Permutations - Combinations

Lesson 24 Computer Math I: Pixels, Bits, and the Binary Numeral System - Matrices - Boolean Algebra

Lesson 25 Computer Math II: Sequences - Series - Sums - Infinite Series

Week 7 Quiz

Exam 1, Week 8: Practice Exam 1.1 & 1.2, Quarterly Exam 1

Lesson 26 Sum and Difference Two Cubes; Polynomial Division: Sum and Difference of Two Cubes - Polynomial Division

Lesson 27 Game Playing with Logarithm Laws; Taking the Logarithm of: Game Playing with Logarithm Laws - Taking the Logarithm of

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Lesson 28 Synthetic Division and the Remainder Theorem; Factor Theorem: Synthetic Division and the Remainder Theorem - Synthetic Division and the Factor Theorem

Lesson 29 Nonstandard Absolute Value Equations; Finding Roots of Polynomial Equations - Nonstandard Absolute Value Equations - Finding Roots of Polynomial Equations

Week 9 Quiz

Lesson 30 Pascal's Triangle and the Binomial Theorem; Distinguishable Permutations: Pascal's Triangle and the Binomial Theorem - Distinguishable Permutations

Lesson 31 Advanced Radical Equations

Lesson 32 Polar Form of a Complex Number; More Rate Problems: Polar Form of a Complex Number - More Rate Problems

Lesson 33 Factorable Trig Equations

Week 10 Quiz

Lesson 34 Composite Functions; Products of Complex Numbers: Composite Functions - Products of Complex Numbers

Lesson 35 Inverse Functions; Inverse Logarithms: Inverse Functions - Inverse Logarithms

Lesson 36 Modeling of Linear Functions

Lesson 37 Even and Odd Functions

Week 11 Quiz

Lesson 38 Reciprocal Trig Equations; Advanced Trig Equations: Reciprocal Trig Equations - Advanced Trig Equations

Lesson 39 New Domains, Ranges, and Intervals after Operations; Decomposing Functions: New Domains, Ranges and Intervals from Operations - Decomposing Functions

Lesson 40 Operations with Numerical Representation of Functions

Lesson 41 The *t*-Test; Factoring Polynomials with Imaginary Roots: The t-Test - Factoring Polynomials with Imaginary Roots

Week 12 Quiz

Lesson 42 Locus Definition of a Circle; Coordinate Geometry Proofs: The Locus Definition of a Circle - Coordinate Geometry Proofs

Lesson 43 Operations with Graphical Representations of Functions

Lesson 44 Abstract Rate Problems

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Lesson 45 Symbolic Transformations of Functions

Week 13 Quiz

Lesson 46 Graphical Transformations; Numeric Transformations: Graphical Transformations of Functions - Numerical Transformations of Functions

Lesson 47 Matrix Multiplication

Lesson 48 Nonstandard Representation of Linear Functions

Lesson 49 Locus definition of a Parabola

Lesson 50 Nonstandard and Other Representations of Absolute Value Functions

Week 14 Quiz

Exam 2, Week 15: Practice Exam 2.1 & 2.2, Quarterly Exam 2

Lesson 51 Resolving Fractions into Infinite Series

Lesson 52 Modeling of Absolute Value Functions

Lesson 53 Nonstandard and Other Representations of Quadratic Functions

Lesson 54 Resultant Vectors: Force Applications

Week 16 Quiz

Lesson 55 Locus definition of an Ellipse

Lesson 56 Modeling of Quadratic Functions

Lesson 57 DeMoivre's Formula, Euler's Formula, and Complex Roots: De Moivre's Formula - Finding Complex Roots

Lesson 58 Infinity as a Limit; Special Limits: Infinity as a Limit - Some Special Limits (That are Also Derivatives)

Week 17 Quiz

Lesson 59 Nonstandard and Other Representations of Square Root Functions

Lesson 60 Balancing Chemical Equations:

Lesson 61 Modeling of Square Root Functions

Lesson 62 Nonstandard and Other Representations of Degree 3+ Polynomial Functions, Part I

Week 18 Quiz

Lesson 63 Nonstandard and Other Representations of Degree 3+ Polynomial Functions, Part II

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Lesson 64 Nonstandard and Other Representations of Rational Functions

Lesson 65 Nonstandard and Other Representations of Exponential Functions

Lesson 66 Nonstandard and Other Representations of Logarithmic Functions

Week 19 Quiz

Lesson 67 Modeling of Exponential and Logarithmic Functions

Lesson 68 Graphing Reciprocal and Inverse Trig Functions

Lesson 69 Transformations of Trig Functions:

Week 20 Quiz

Lesson 70 Modeling of Degree 3+ Polynomials

Lesson 71 Derivatives of Polynomials; Trig Equations of nθ: Derivatives of Polynomials - Trig Equations of nθ

Lesson 72 Transformations of Reciprocal Trig Functions

Week 21 Quiz

Lesson 73 Symbolic Forms of Piecewise Functions from Graphs

Lesson 74 Locus Definition of a Hyperbola

Lesson 75 Comparing General Forms of Conic and Linear Equations

Week 22 Quiz

Exam 3, Week 23: Practice Exam 3.1 & 3.2, Quarterly Exam 3

Lesson 76 Trig Problem Solving

Lesson 77 Law of Sines

Lesson 78 Nonstandard Solutions for Conics

Lesson 79 Law of Cosines

Lesson 80 More with Inverse Trig Functions

Week 24 Quiz

Lesson 81 Sum and Difference Trig Identities

Lesson 82 Double-Angle, Half-Angle, and Tangent Sum and Difference Trig Identities

Lesson 83 Cramer's Rule; Gas Law Problems

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Lesson 84 More Trig Problem Solving; Angular Velocity: Trig Problem Solving - Angular Velocity

Week 25 Quiz

Lesson 85 Partial Fractions; Recurrence Problems: Partial Fractions - Recurrence Problems

Lesson 86 More Modeling of Trig Functions

Lesson 87 Non-Periodic Functions: Damping Functions - The Sinusoidal Fibonacci Function

Lesson 88 Integrals II: Sums of Rectangles

Week 26 Quiz

Lesson 89 Interest Rate, Savings and Debt

Lesson 90 Deriving formulas for infinite series

Lesson 91 Derivatives of sums and differences

Lesson 92 Integrals III: Definite Integrals

Week 27 Quiz

Lesson 93 Integrals IV: Indefinite Integrals

Lesson 94 Taking the 2nd Derivative

Lesson 95 The Product Rule for Derivatives

Lesson 96 The Quotient Rule for Derivatives

Week 28 Quiz

Lesson 97 The Chain Rule for Derivatives

Lesson 98 Using f' to Find Extrema

Lesson 99 Related rates

Lesson 100 Fundamental Theorem of Calculus

Week 29 Quiz

Exam 4, Week 30: Practice Exam 4.1 & 4.2, Quarterly Exam 4

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Shormann Precalculus

Assignment Chart

Lesson				
1	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
2	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
3	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
4	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 1	❑ Study	❑ Take Quiz	❑ Corrections	
5	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
6	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
7	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
8	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 2	❑ Study	❑ Take Quiz	❑ Corrections	
9	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
10	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
11	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
12	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 3	❑ Study	❑ Take Quiz	❑ Corrections	
13	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
14	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
15	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
16	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 4	❑ Study	❑ Take Quiz	❑ Corrections	
17	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
18	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
19	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 5	❑ Study	❑ Take Quiz	❑ Corrections	
20	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
21	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections

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Lesson				
22	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 6	❑ Study	❑ Take Quiz	❑ Corrections	
23	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
24	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
25	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 7	❑ Study	❑ Take Quiz	❑ Corrections	
Practice Exam 1.1	❑ Study	❑ Practice Exam 1.1	❑ Corrections	
Practice Exam 1.2	❑ Study	❑ Practice Exam 1.2	❑ Corrections	
Exam 1 (Attempt 1)	❑ Study	❑ Take Exam 1	❑ Corrections	
Exam 1 (Attempt 2)	❑ Study	❑ Take Exam 1	❑ Corrections	
26	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
27	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
28	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
29	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 9	❑ Study	❑ Take Quiz	❑ Corrections	
30	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
31	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
32	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
33	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 10	❑ Study	❑ Take Quiz	❑ Corrections	
34	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
35	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
36	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
37	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 11	❑ Study	❑ Take Quiz	❑ Corrections	
38	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
39	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections

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Lesson				
40	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
41	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 12	❑ Study	❑ Take Quiz	❑ Corrections	
42	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
43	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
44	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
45	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 13	❑ Study	❑ Take Quiz	❑ Corrections	
46	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
47	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
48	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
49	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
50	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 14	❑ Study	❑ Take Quiz	❑ Corrections	
Practice Exam 2.1	❑ Study	❑ Practice Exam 2.1	❑ Corrections	
Practice Exam 2.2	❑ Study	❑ Practice Exam 2.2	❑ Corrections	
Exam 2 (Attempt 1)	❑ Study	❑ Take Exam 2	❑ Corrections	
Exam 2 (Attempt 2)	❑ Study	❑ Take Exam 2	❑ Corrections	
51	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
52	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
53	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
54	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 16	❑ Study	❑ Take Quiz	❑ Corrections	
55	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
56	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
57	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
58	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections

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Lesson				
Quiz 17	❑ Study	❑ Take Quiz	❑ Corrections	
59	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
60	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
61	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
62	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 18	❑ Study	❑ Take Quiz	❑ Corrections	
63	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
64	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
65	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
66	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 19	❑ Study	❑ Take Quiz	❑ Corrections	
67	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
68	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
69	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 20	❑ Study	❑ Take Quiz	❑ Corrections	
70	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
71	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
72	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 21	❑ Study	❑ Take Quiz	❑ Corrections	
73	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
74	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
75	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 22	❑ Study	❑ Take Quiz	❑ Corrections	
Practice Exam 3.1	❑ Study	❑ Practice Exam 3.1	❑ Corrections	
Practice Exam 3.2	❑ Study	❑ Practice Exam 3.2	❑ Corrections	
Exam 3 (Attempt 1)	❑ Study	❑ Take Exam 3	❑ Corrections	
Exam 3 (Attempt 2)	❑ Study	❑ Take Exam 3	❑ Corrections	

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Lesson				
76	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
77	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
78	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
79	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
80	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 24	❑ Study	❑ Take Quiz	❑ Corrections	
81	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
82	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
83	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
84	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 25	❑ Study	❑ Take Quiz	❑ Corrections	
85	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
86	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
87	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
88	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 26	❑ Study	❑ Take Quiz	❑ Corrections	
89	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
90	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
91	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
92	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 27	❑ Study	❑ Take Quiz	❑ Corrections	
93	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
94	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
95	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
96	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
Quiz 28	❑ Study	❑ Take Quiz	❑ Corrections	
97	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
98	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections
99	❑ Reading	❑ Lecture	❑ Practice Set	❑ Corrections

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Lesson				
100	❏ Reading	❏ Lecture	❏ Practice Set	❏ Corrections
Quiz 29	❏ Study	❏ Take Quiz	❏ Corrections	
Practice Exam 4.1	❏ Study	❏ Practice Exam 4.1	❏ Corrections	
Practice Exam 4.2	❏ Study	❏ Practice Exam 4.2	❏ Corrections	
Exam 4 (Attempt 1)	❏ Study	❏ Take Exam 4	❏ Corrections	
Exam 4 (Attempt 2)	❏ Study	❏ Take Exam 4	❏ Corrections	

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