2024-25 LIVE PRECALCULUS CLASS SYLLABUS

Tuesdays: 11 AM-12 PM Central Time

Students Who Used Saxon for Algebra 2: Complete the Prep Course

Can I start working on my course before class starts?

Orientation: 2 weeks before class starts, parents will receive an orientation video that explains all the information in this syllabus, as well as how to use the eLearning course & Webex. To ensure you receive all emails, please add support@diveintomath.Zendesk.com to your contacts in your email account.

Required Supplies:

- **Curriculum:** Purchase the self-paced **eLearning Shormann Precalculus with Trigonometry**. While it can be purchased anytime, we recommend at least three weeks before classes start. If you want to start working on the course earlier, please read the article at the top of this page.
- 1-inch 3-ring binder with dividers and college rule or typing paper (typing paper is preferred), mechanical pencils and erasers
- Headphones or speaker (optional: microphone or you can message instead)
- Drawing Compass & Ruler **OR** GeoGebra App (recommended)
- Calculator: Dr Shormann's Calculator Recommendations
- PDF Binder: You need to be able to convert your handwritten homework into a digital .pdf format with all pages in one PDF. **I recommend an app called TurboScan (~$10). You can use others but we only provide support for TurboScan.** It can be purchased on the Apple App Store as well as for Android devices. Click here for step-by-step instructions on using the TurboScan app.

Assignments & Homework: The eLearning Course:

The eLearning course is where students complete daily assignments (video lessons and homework) and take quizzes and exams. Please read the **Teacher's Guide** for more information on using the Shormann eLearning course.

Sample weekly schedule for Precalculus:

Day 1: Do 1 lesson (2 hr).
Day 2: Do 1 lesson (2 hr).
Day 3: Do 1 lesson (2 hr).
Day 4: Do 1 lesson (2 hr)
Day 5: Online Class Meeting. Upload Homework and study for the quiz.

Tips for Success

- **Spread assignments out over at least 4 days.** Doing all the homework in two or three days will decrease fluency.
- **Limit math to an hour and half to two hours per day.** If more time is needed, work on math another 1-2 days.
- **Print and follow the steps on the Practice Set Instructions** (linked on the eLearning home page and Teacher's Guide).
- **Email me right away i**f you feel overwhelmed or can't do your work. The longer you wait the further behind you will get and the longer it will take to catch up.

Format for Homework & Notes:

- Use typing paper.
- Fold your paper in half, forming two columns, and work problems vertically in both columns, front and back.
- For problems in the Practice Set, grade your handwritten work with a red pen, and mark each problem with an X if incorrect or √ if correct.
- Rework all missed problems in red, writing the correct solution next to the missed problem.
- Put your name and lesson number on the top right corner of each page. Show your work. If you don't show work, you will not receive full credit.

Turn in Homework & Lecture Notes Before Class Starts

Your name and assignment number should be on the top right corner of the front page. Remember these things when uploading your homework:

1) **PDF is the only acceptable file format.** All homework for one week must be combined into one file, or "PDF binder". Not a "zip" file but a PDF file.

2) **don't exceed 5 MB per file.** In other words, the single PDF file containing all your work for that week must not exceed 5 MB in size. Resize your files if necessary.

3) See PDF binder in required supplies on page 3.

Live Class Meetings:Webex

We use Webex for live class meetings. Each week, you will receive a meeting invitation in your email, which will have a link to attend that week's class.

Class time will involve reviewing the week's lessons, taking a quiz and discussing the results, and answering questions you have. You can also email me during the week with questions at drshormann@gmail.com.

You can ask questions via chat or voice (headset with microphone required). Students use the text area to "chat" publicly with other students. Conversations will end when class begins. Any inappropriate conversations will not be tolerated and will be reported to your parents. If you have a question about a math problem or concept, you can send it to me as either a public or private chat message.

Grading

At the end of the year, the two lowest homework and quiz grades will be dropped. You will receive an evaluation after every quarterly exam. You can check your grade any time online. You will receive a certificate of completion if your average is 75% or greater.

- Homework is worth 20%.
- Class participation is worth 5%, and is based primarily off attendance, plus an obvious effort to respond when questions are asked.
- The four quarterly exams are worth 40%, and the in-class quizzes worth 35%.

Exams

If you have been completing your work at home **with integrity**, making 80% or better on most quizzes, and you follow the How to Study for Exams, you should do well on the quarterly exams.

Absences:

- Class Meetings are recorded.
- To allow for absences, at the end of the year I drop the two lowest weekly quiz grades and two lowest homework upload grades. If you are absent two times or fewer, then the work you didn't turn in will not affect your grade. Of course, you still need to do the work or you will struggle in the remainder of the course.
- I WILL NOT ACCEPT LATE WORK (but I will accept it early if you know you will be missing class on a certain date).

- PLEASE DO NOT ASK TO TURN WORK IN LATE. If you have to miss class more than two times and you are concerned about it affecting your grade, then please talk to me and we will work something out.

Conduct:

A good student will be attentive while I am talking, will come to class prepared and on time, and will treat everyone with respect and kindness. They will also meet the participation requirements described below. Also, do your homework with integrity! If your homework is consistently perfect, but you consistently fail the weekly quizzes, that is almost always a sign of cheating on homework, and you will be asked to drop the class. Strive to be a good student!

Participation:

Getting all your schoolwork done each week can be challenging, but I won't be doing you any favors by letting you get by with little or no homework completed for multiple weeks. At a minimum, each week you must turn in 2 homework assignments and complete the in-class quiz. If, for any 3-week period, you fail to meet the minimum requirement, and/or show little effort to complete more than the minimum requirement, you will be asked to drop the class.

SAT/ACT tests: Together, Shormann Math Algebra 1 and 2 cover all the content on **both** the ACT and SAT exams. Just like you take practice exams to help you prepare for the Shormann Math quarterly exams, we recommend that, prior to your SAT or ACT exam, you use some type of prep course containing at least 2 practice exams. Learn more about how to prepare for PSAT, SAT, and ACT here.

Should you take the CLEP Precalculus exam? Shormann Precalculus covers all the content on the CLEP Precalculus Exam. Students who make 90s or better on the quarterly exams and most quizzes are encouraged to take the CLEP Precalculus exam. This exam can earn up to three college credits, validates your transcript, and can boost applications in the scholarship and admissions application process. Thousands of colleges accept CLEP credits, but even if the college you attend does not accept them, passing a CLEP exam will show the college you plan to attend that you are capable of college-level work. We will provide our CLEP Professor Precalculus course (practice exams, review lessons and practice problems) to you for free if you want to take this exam.

How to read the Assignment Chart: The chart is set up as a weekly schedule that shows you what work is due each week. Make sure you complete everything in the "Lessons Due" column **BEFORE** you come to class on the Tuesday date listed. Make special note of the 4 quarterly exam dates. On these weeks, students study for their quarterly exam and take the exam during class. Start your new lessons the day after class.

2024-25 Weekly Assignment Chart: Live Precalculus

HAVE YOUR BINDER, CALCULATOR, AND A PENCIL FOR EVERY CLASS!

Students Who Used Saxon for Algebra 2: Complete the Prep Course for Precalculus

Week #	Class Date	Lessons Due Before Class
1	Aug. 20	Lessons 1-4
2	Aug. 27	Lessons 5-8
No Class - Labor Day	Sep. 3	-
3	Sep. 10	Lessons 9-12
4	Sep. 17	Lessons 13-16
5	Sep. 24	Lessons 17-19
6	Oct. 1	Lessons 20-22
7	Oct. 8	Lessons 23-25
8	Oct. 15	Study for 1st Quarter Exam, take exam during class.
9	Oct. 22	Lessons 26-29
10	Oct. 29	Lessons 30-33
11	Nov. 5	Lessons 34-37
12	Nov. 12	Lessons 38-41
13	Nov. 19	Lesson 42-45
No Class: Thanksgiving Break	Nov. 26	-
14	Dec. 3	Lesson 46-50
15	Dec. 10	Study for 2nd Quarter Exam, take exam during class.
No Class - Christmas	Dec. 17, 24, 31, Jan 7	-
16	Jan. 14	Lessons 51-54
17	Jan. 21	Lessons 55-58
18	Jan. 28	Lessons 59-62
19	Feb. 4	Lessons 63-66
NO Class - Winter Break	Feb. 11	-
20	Feb. 18	Lessons 67-69
21	Feb. 25	Lessons 70-72
22	Mar. 4	Lessons 73-75
23	Mar. 11	Study for 3rd Quarter Exam, take exam during class.
No Class - Spring Break	Mar. 18	-
24	Mar. 25	Lessons 76-80
25	Apr. 1	Lessons 81-84
26	Apr. 8	Lessons 85-88
27	Apr. 15	Lessons 89-92
28	April 22	Lessons 93-96
29	April 29	Lessons 97-100
30	May 6	Study for 4th Quarter Exam, take exam during class.

Course Sequence

NOTE: Lessons 1-25 introduce fundamental rules and definitions covered in the 10 major topics of Shormann Precalculus, plus review of Shormann Algebra 2.

Lesson 1 Number I

Lesson 2 Ratio I

Lesson 3 Algebra I

Lesson 4 Algebra II

Lesson 5 Algebra III

Lesson 6 Geometry I

Lesson 7 Geometry II

Lesson 8 Geometry III

Lesson 9 Analytical Geometry I

Lesson 10 Analytical Geometry II

Lesson 11 Analytical Geometry III

Lesson 12 Analytical Geometry IV

Lesson 13 Analytical Geometry V

Lesson 14 Measurement I

Lesson 15 Measurement II

Lesson 16 Trigonometry I

Lesson 17 Trigonometry II

Lesson 18 Trigonometry III

Lesson 19 Calculus I

Lesson 20 Calculus II

Lesson 21 Calculus III

Lesson 22 Statistics I

Lesson 23 Statistics II

Lesson 24 Computer Math I

Lesson 25 Computer Math II

Lesson 26 Sum and Difference Two Cubes; Polynomial Division

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

Lesson 28 Synthetic Division and the Remainder Theorem; Factor Theorem

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

Lesson 30 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

Lesson 33 Factorable Trig Equations

Lesson 34 Composite Functions; Products of Complex Numbers

Lesson 35 Inverse Functions; Inverse Logarithms

Lesson 36 Modeling of Linear Functions

Lesson 37 Even and Odd Functions

Lesson 38 Reciprocal Trig Equations; Advanced Trig Equations

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

Lesson 40 Operations with Numerical Representation of Functions

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

Lesson 42 Locus Definition of a Circle; Coordinate Geometry Proofs

Lesson 43 Operations with Graphical Representations of Functions

Lesson 44 Abstract Rate Problems

Lesson 45 Symbolic Transformations of Functions

Lesson 46 Graphical Transformations; Numeric Transformations

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

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

Lesson 55 Locus definition of an Ellipse

Lesson 56 Modeling of Quadratic Functions

Lesson 57 DeMoivre's Formula, Euler's Formula, and Complex Roots

Lesson 58 Infinity as a Limit; Special Limits

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

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

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

Lesson 67 Modeling of Exponential and Logarithmic Functions

Lesson 68 Graphing Reciprocal and Inverse Trig Functions

Lesson 69 Transformations of Trig Functions

Lesson 70 Modeling of Degree 3+ Polynomials

Lesson 71 Derivatives of Polynomials; Trig Equations of $n\theta$

Lesson 72 Transformations of Reciprocal Trig Functions

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

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

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

Lesson 84 More Trig Problem Solving; Angular Velocity

Lesson 85 Partial Fractions; Recurrence Problems

Lesson 86 More Modeling of Trig Functions

Lesson 87 Non-Periodic Functions

Lesson 88 Integrals II: Sums of Rectangles

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

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

Lesson 97 The Chain Rule for Derivatives

Lesson 98 Using f' to Find Extrema

Lesson 99 Related rates

Lesson 100 Fundamental Theorem of Calculus