

Precalculus

KAT Tutor:

Bethel McGrew

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9th-12th grade

Course description:

This course will equip mathematically curious students with the tools they need to study calculus at a high-school or college level, while reinforcing a solid foundation in algebra. Class will consist of topical introductions and Q & A (student interaction with the tutor and with each other is encouraged!) practice problem sets, and weekly quizzes and/or tests. As time allows, topics covered will include functions and their graphs (polynomial, trig, log and exponential), function operations, inverse functions, fundamental trig identities and the unit circle, systems of equations and inequalities, sequences and series, conic sections. For students who come to the class with prior background in these topics, more challenging homework can be provided to help them level up further—if desired, to calculus itself!

Pre-requisites:

Algebra II

Materials:

Each family must provide their student's textbook. An assignment from the book will be given prior to the first class. Each student must come prepared with the following:

- Textbook: *Pre-Calculus Demystified*, 2nd edition, by Rhonda Huettenmueller, copyright 2012 (ISBN: 978-0071778497, cost \$18 new, \$10 used). **Note: Please ensure any used purchases are 2nd edition prints.**
- Homework and class notes notebook(s). (Either a multi-subject notebook with dividers or two 1-subject spiral-bound notebooks is fine, as long as students have distinctly separate designated places to work problems and take notes. Students may use either a binder with looseleaf pages or notebooks with perforated pages, as long as pages can be neatly torn out and handed in for grading.)
- Graph paper (can either be purchased or printed out for free online at printfreegraphpaper.com).
- Two-pocket folder.
- Calculator: Nothing higher than a scientific calculator such as the TI-30XS will be required (cost \$15.00 on Amazon), although a TI-83 or TI-84 plus graphing calculator is a good investment for students planning to take further courses in college.

Supplementary Text

Students ready for a gentle intro to calculus itself are encouraged to buy the companion volume *Calculus Demystified*, by Steven G. Krantz. Problem sets can be assigned out of one or both books according to students' needs and abilities.

Tuition: \$380 for the year

- \$30 non-refundable deposit due on registration
- \$175 on the first day of class in September
- \$175 on the first day of class in January

Drop/Add Policy:

If a student needs to drop this this class in the first two weeks, tuition will be refunded minus a small amount for the church building fee. If the drop occurs after the third class, the tuition is non-refundable. No new students may add the course after registration closes without consent from both the tutor and KAT.

Absence/Cancellation Policy

If a student misses class, it is his responsibility to contact Miss McGrew for assignments. In the event of a class cancellation, the student needs to work on the assignment for the week.

About the Instructor:

I love teaching and working with students of all ages and abilities. After being homeschooled through high school, I received a double Bachelor of Science degree in philosophy and mathematics from Western Michigan University in 2015. Upon graduation, I was granted a teaching fellowship in the pure math doctoral program at WMU, where I taught various college math classes from Algebra II to applied and engineering calculus. I earned my master's degree in 2017 and am currently all but dissertation in my Ph.D. studies in graph theory. In addition, I have enjoyed many opportunities to tutor foreign K-12 students in English as a second language. My many other interests include writing, music, and chess. Above all, I am a strong Christian with a commitment to letting my faith inform whatever I do.

Curriculum Note:

The course text was chosen for optimal readability plus cost-efficiency. While it does not offer a typical "textbook" presentation, it is highly rated for its clear layout, many worked examples and practice problems with solutions so that students can easily digest the material and get instant feedback on their work.