

Quantitative Reasoning

Mr. Trevor

Spring 2024

Purpose of class

My goal in Quantitative Reasoning is to refresh our knowledge of the math we've already learned while building computational skills you may find useful in your lives and careers. You have already learned a great deal about algebra, geometry and calculus. These fields of math give engineers, economists, and you—if you choose to jump in!—the ability to know and change the world we live in. On a device as accessible as your laptop computer, you can simulate and predict non-trivial systems and perhaps even change those systems if you want. My hope is that this class will be a transition away from rote memorization and towards rediscovering the practical and creative *use* of math as a well-constructed system of thought to explore our world.

We will also explore the foundations of math through the construction of the number system, functions, combinatorics (this is what mathematicians call “counting”... there's a lot more to counting than you might think!), and the sizes of infinity. These investigations will develop our ability to think about math consistently and energetically, and, more importantly, they will build the muscle of rigorous thought, whatever problems you choose to put it towards!

Grades

There will be a weekly problem set released on the first day of class in a given week and be due the first class day the following week. We will structure our in-class time around learning to do the exercises in these problem sets together. This will be the only work that is taken for a grade. But the problems will be difficult to work without practicing in class, so attendance is strongly encouraged. There will be 12 problem sets and I will drop 2. The grading will be on a curve so that $grade = \frac{\% \text{ correct}}{\% \text{ max correct}}$. I will also grade by effort if you prefer in this manner:

A	Only attainable through > 90% correct answers on the curve
B	Strong, honest effort with many correctly worked exercises
C	Very little effort
F/0	No effort/not turned in

Exceptions and other policies

Late homework can be turned in with a letter grade penalty per week and I will accomodate any reasonable medical/personal issues on the honor system. I am also open to suggestions on course content and pace. If you feel that the class is not working for you, we can try *any* combination of online/self-paced instruction or change the format of class, as long as some reasonable work and learning is happening. Talk to me or KAPS faculty/administration, especially Mrs. Lisa and Mrs. J about your questions and ideas for the class at any time! My school e-mail is theise@kapschool.org.