



Summer Math 2019
Upper School Mathematics
Honors Algebra 2

Dear Honors Algebra 2 Students and Parents,

Welcome to summer! I hope you all have a wonderful, restful, and amazing summer vacation. When you return we will jump right into Honors Algebra II. We will start with a brief review of Algebra I (I know that it has been a while for some of us) and then dive deeper into more complex algebraic topics.

During your summer vacation, I would like you to get the opportunity to explore the SAT's in more depth. Rarely do we have the time to really look at the types of questions asked during the SAT's. You do, however, have a very strong mathematical foundation, and you have already mastered a majority of the topics covered on the math sections of the SAT's. This summer I want you to give yourself some time to practice before you sit for this exam. The practice problems that you will work on will also help you to review many of the topics you covered in both Algebra I and Geometry.

For summer math work, each of you will practice for the SAT's for **1 hour per week**. There are 12 weeks to this summer break, so you will practice for a total of **12 hours**. I hope that you will find that this practice makes a big difference and serves as a wonderful review for you. Khan Academy has partnered with the collegeboard to provide practice questions and videos that cover a number of SAT topics. They also have 8 full length practice tests that are printable.

The topics covered on the SAT, and therefore on the linked Khan Academy page below, serve as a review of topics covered in your previous math classes. The topics covered are as follows:

In the "Heart of Algebra" group, you will see problems from Honors Algebra I. These topics include:

- Solving, interpreting, and graphing linear equations and inequalities
- Solving, interpreting, and graphing systems of linear equations and inequalities
- Isolating quantities (this is from passport to advanced math but covered in Algebra I)
- Using function notation (this is from passport to advanced math but covered in Algebra I)

In the “Passport to Advanced Math” group, you will see problems from topics that we will cover in Honors Algebra II. These topics include:

- Solving, using, and manipulating quadratic equations
- Evaluating radical and rational exponents
- Solving radical and rational equations
- Evaluating polynomial factors and graphs
- Solving nonlinear equations

In the “Problem Solving and Data Analysis” section, you will see problems from topics covered in Geometry and Statistics. These topics include:

- Ratios, rates, and proportions
- Percents
- Units and table data
- Scatter plots
- Linear and exponential growth (seen in detail in precalculus)
- Data inferences
- Center, spread and shape of distributions
- Data collection and conclusions

In the “Additional Topics in Math” section, you will see problems from topics covered in Geometry. These topics include:

- Volume
- Right triangle problems and trigonometry
- Congruence and similarity
- Angles and arc length
- Circles

You will find that the Algebra I, Geometry and Statistics sections will help you to review and strengthen your understanding of the topics you saw in those courses. The Algebra II section will, of course, be new to you. Try your best with this section, and it will serve as a preview of what will come this year.

The link to the Kahn SAT math section is below.

You will need to sign up for a collegeboard account if you do not have one already.

<https://www.khanacademy.org/test-prep/sat/sat-math-practice>

Here is the link to to 8 practice tests...

<https://www.khanacademy.org/test-prep/sat/full-length-sat-1>

Please use the links to complete problems and watch videos on topics that you might not remember so well. **Each week I want you to document (write down) the problems you have worked on and videos you have watched.** I will look through these problems and notes, and these will be your first homework grades of the year.

If you have any questions, please feel free to email me at Amanda.Barter@woosterschool.org. Thank you, and have a wonderful summer. See you in the fall!

Mrs. Barter