

Introduction and Instructions

Background and Purpose

The goals of the Math 4/Calculus Summer Assignment are two-fold:

1. Avoid “summer droop” and maintain proficiency with math concepts that are needed to be successful with calculus content.
2. Identify knowledge gaps that may hinder progress in working with the concepts of calculus.

All the content in the summer assignment is material that you have already covered, most likely in Grades 7 through 11, with the majority of the content being material covered in Grades 8 and 9. Some of the material will be very familiar and you will likely find easy to do; other material you may have forgotten and you will need to refresh your memory through lessons and practice.

The Assignment

The assignment is divided into three main parts, which should be done in order.

Part 1

In the first part, the objective is to identify areas of math that you will definitely need to focus on this summer. The steps for this part are:

1. Take the “Foundational Review Test: Pre-Review Version” as you would any math test (plenty of time to finish, quiet space, no notes, and no Internet). Do your best to answer all the questions. It is totally fine to skip questions that you do not know how to do. Section 6 (Factors and Divisibility) is required for students who are considering taking Honors; it is an optional challenge for those not considering Honors.
2. Once you have finished, check your answers against the Answer Key, and count your points for each of the five sections (six sections if you are considering Honors).
3. For questions you got wrong, try to find your mistake. If you can find your mistake, correct it and update your points for that section.
4. The sections for which you did not get full points are the ones you should focus the most on this summer. Highlight those sections on your scoresheet.
5. Be sure to keep your test, your scoresheet and the work you did to complete it (they all count towards your grade).

Part 2

The second part is the core of the summer assignment: reviewing important math topics. You will work through a number of problems in each of the five (or six, if you are considering Honors) foundational areas, putting most of your time/focus on the areas that you identified in Part 1. The steps for this part are:

1. Do the handouts in order, starting with “Linear Equations and Graphs (Part 1)”. Attempt each question in each section, showing work as necessary. Keep all of your work together (on the handout, on loose-leaf, or in a composition book so it can be turned in and counted towards your grade). If you do not know how to do a problem, annotate it in some way (highlight or mark with a question mark, for example).
2. Check your answers using the Answer Key. If you did not get a correct answer, you will need to do some additional work to understand the topic. Khan Academy is strongly recommended: on my DP and on the electronic versions of the handout, there are links to the matching lessons in Khan Academy. Use those links to navigate to the Khan Academy resources (more details on using Khan Academy are provided below).
3. After having completed the lessons and practice problems on Khan Academy, correct your work and complete the questions you did not do for that section; then move on to the next section.
4. *Potential Honor Students*: Be sure to attempt the challenge questions and use Khan Academy, when necessary, to help you master those questions.

Part 3

The third part of the summer assignment is to do the practice test: the “Foundational Review Test: Post-Review Version”. You must complete this test before school starts (the effort you put into this test will be counted toward your grade so be sure to keep all your work). In class, we will be reviewing the solutions to this test as part of your preparation for the actual Foundational Review Test (a test that will be given during the first week of school, will be similar to the Post-Review Version, but will be graded separately from the summer assignment).

Khan Academy

A class called “2019 Math Summer Assignment” has been created in Khan Academy, and it contains lessons and practice exercises for all the content contained in the summer assignment. This is your best resource for refreshing your memory on how to do a particular topic. You do not have watch every video or read every article; but you should do enough (including **all** the practice problems) so that you feel comfortable with the topic.

Be sure to follow these guidelines when using Khan Academy:

1. Use your High Tech High e-mail address for your login credential (do not use personal e-mail addresses).
2. Join the “2019 Math Summer Assignment” class. By joining the class, all of your progress and effort is visible to me, meaning you do not have to take notes or otherwise track your progress for credit towards your grade. The code to use to join the class is: PCJBFQGT.
3. Be sure to save all the written work you did to answer the practice problems (no need to write anything down for problems that you could easily do in your head). All that work will count towards your grade.
4. Khan Academy does not send notification e-mails when someone joins the class. Since I have to assign topics to new members to the class (it is not done automatically), please send me an e-mail once you have joined the class (avernon@hightechhigh.org)

If you do not have access to Khan Academy this summer, please let me know in advance by sending me an e-mail and we will make alternative arrangements for you (which will depend on your personal situation).

Pacing

It is highly recommended that you do the “Foundational Review Test: Pre-Review Version” as soon as possible. This will give you a better sense of how much of the assignment is going to require extra time on Khan Academy. Start the assignment early so you get a sense of how quickly you will progress. If you wait to the last moment to do this assignment, you may find yourself unprepared for the Foundational Review Test that will be given during the first week of school.

My Digital Portfolio

All of the handouts (including this one) are on my digital portfolio: ajv.me/summer

For each section of the practice handout (for example, the “Evaluate functions from their graph” section in the “Functions (Part): Function Notation and Evaluate Functions” handout), there is a corresponding link to the practices problems in Khan Academy. When you click on one of those links, you automatically get to see all the other resources for that topic, including videos and articles. All these links are on my DP, and these links can also be accessed using the online PDFs of the handouts.

Contact Me

Please feel free to e-mail me if you are having issues of any sort. I will be travelling for part of the summer, but I will do my best to respond.