

1. In this technology lab you are going to further explore solving inequalities graphically in GeoGebra. To get started, create a GeoGebra account to save your work to by going to www.geogebra.org. Then go to the Graphing Calculator.

IMPORTANT: Save your work in GeoGebra as you go so as to not accidentally lose your progress!

2. Given the inequality $\left| -\frac{2}{5}x + 3 \right| \leq -\frac{1}{2}|3x - 2| + 5$, begin by defining the left side of the inequality to be one function and the right side of the inequality to be another function. Write down both functions, using function notation, here.

3. Graph both of these functions in GeoGebra and answer the following questions.

a. At what points do the two graphs intersect?

b. What is/are the solution(s) to the inequality? Use proper set notation and interval notation.

c. For this interval of solutions, where do the y -values stay between?

4. Save the GeoGebra graph you created **as a public file** (or I cannot see it) and write, as legibly as you possibly can, the link to your work here so that I can type it in to take a look.

10. Now consider the inequality $|-2x^2 - 4x + 6| \leq 3$. Again begin by defining each side of the inequality to be its own function. Write both of these functions, using function notation, here.

11. Graph both of these functions in GeoGebra and answer the following questions.

a. At what points do the two graphs intersect?

b. What is/are the solution(s) to the inequality? Use proper set notation and interval notation.

c. For this interval of solutions, where do the y -values stay between?

12. Write 2-3 sentences as needed to describe how the absolute value of a quadratic looks when graphed and how the absolute value changes affects the shape compared to if you didn't have an absolute value around it.

13. Save the GeoGebra graphs you've created **as a public file** (or I cannot see it) and write, as legibly as you possibly can, the link to your work here so that I can type it in to take a look.