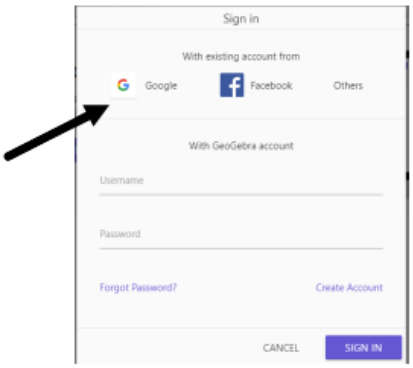
Geometry Honors **/50 pts** **Name**_____
Qtr1 Project: GeoGebra *(3pts off each block late)* **Block**_____
Date Due_____

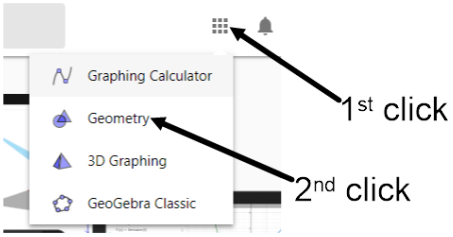
This is an individual digital project. Your objective is to create several digital drawings on an online tool called GeoGebra. Complete the steps below and separate each drawing by a horizontal line using the line tool. At times you will be given step-by-step directions but most of the time you will be given an object to create, and it is up to you to figure out how to accomplish that task. You may do a google search to figure out unknown words. You may use the step-by-step help suggestions once you access a tool. (*These steps show up at the bottom of the page.*) You are also welcome to ask others in the class as long as you create your own document.

To begin you will need to create an account on GeoGebra.



- Open Chrome. geogebra.org
- Select "Sign In" which is on the upper right hand of the screen.
- Click on the Google button to link your Google account with GeoGebra. You can now sign in each time using this Google button or your school username and password. (A profile page may come up it is optional to fill out this page, scroll down and click save)

- Click on the 3 by 3 grid (1st click) and then select Geometry (2nd click).



To save **(I highly recommend that you save SLOWLY and CAREFULLY after each step or two!)**

- Select the horizontal three line segments (3 bars) on the upper left, "Save" name your file. "Firstname_Lastname_Qtr1Project_Block#" (for example "John_Smith_Qtr1Project_O3"). Use the drop down menu to change your file from "Private" to "Shared", then select "SAVE".
- **Keep saving!** 3 bars, Save.

To open your document for editing later:

- Sign into GeoGebra.
- Click on the 3 by 3 grid (upper right side) and select Geometry.
- Click the 3 bars (upper left side).
- Open.
- Select your file you want to work on. Select "Edit".

To submit your project:

- When you have completed your project, copy your link into Canvas into the Quarter 1 Assignment.
  - Click on the 3 bars (upper left side).
  - Select "Share".
  - Copy the link into Canvas.
- Turn in THIS packet AFTER you have submitted your GeoGebra file using Canvas.

_____**0a**. (5pts) ALL DRAWINGS SHOULD LOOK NEAT AND NOT CLUTTERED. DRAG LABELS AND MEASUREMENTS SO THEY ARE NOT HIDDEN BEHIND OBJECTS! To move or to edit anything on the document, you must constantly go back to the pointer tool. A picture for the first two constructions is shown below. Each section should look like that picture.

_____**0b.**(1pt) Place your name on the top left of the document.

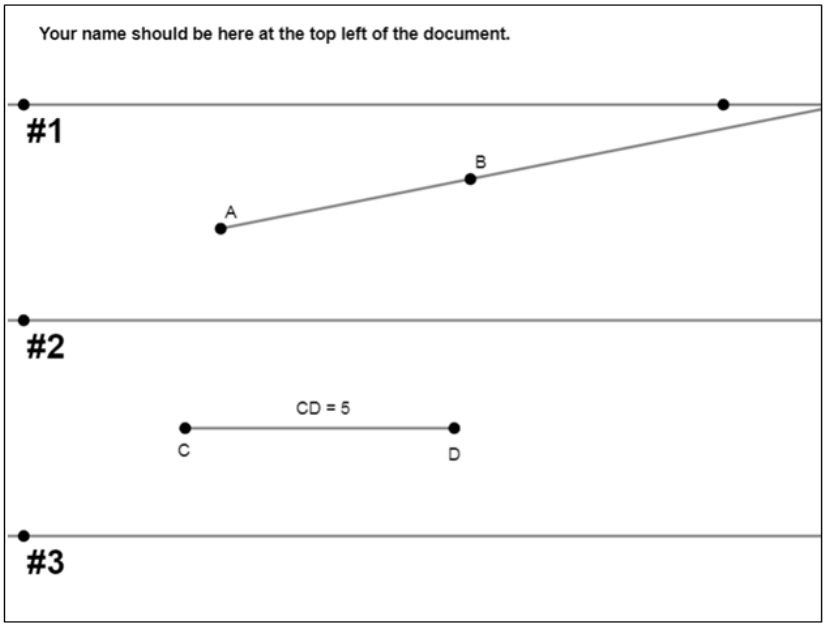
_____**1a.**(2pts for entire document) Draw a horizontal line separating your name from the next figure. Add a label to each new step as #step. For this section label it as #1. (see picture below).

_____**1b**.(2pts) Create ray AB (It is very possible you may need to show the letters (labels) and rename them to A and B.)

_____**1c.** Draw a horizontal line separating the next figure. (You must place this line between all figures. This is the only time you will be reminded.)

_____**2.**(2pts) Draw line segment CD.
Then, use the distance or length tool to measure the length of this segment.

***Check to make sure your document looks like the one below before you continue!**



_____**3.**(3pts) Using the segment tool, draw two segments that form an angle. The segments should share a common point. (Point F). Name the angle EFG.
Then, measure the angle using the angle tool. GeoGebra may measure the reflex angle, which is an angle bigger than 180^o. You must make GeoGebra show a measure between 0^o and 180^o.
Steps to accomplish this:

- Right click on the angle measure. (A right click on a Chromebook is a two-finger tap)
- Click on Angle 0^o to 180^o

_____**4.**(3pts) This next step will help you for later in the document. This is a challenging step. Check with others before moving on. You will construct the line segment HI.

- Create a line that is neither vertical nor horizontal.
- Create a segment connecting the two points that are on the line.
- Hide the line (not the segment). To hide the line, click on a point on the line that is not on the segment. Then, right click and choose Settings. Then, uncheck the Show Object box.

_____**5a.**(4pts) Create an angle, bisect that angle, and measure the two angles.

- Create angle JKL using two segments.
- Draw an angle bisector KM using the "angle bisector tool". This bisector will initially be a line. We only want lines on the document to separate each figure.
- You need to create a point on this newly created line on the interior of the angle.
- Place a segment connecting the two points that are on the line. (Like you did in step 4)
- Hide the line.
- Measure each of the two smaller angles.

_____**5b.**(2pts) CONJECTURE: What does it mean to "bisect an angle"? (Place your answer in section #5.)

*****You have now gained the knowledge of the basics of GeoGebra. The next three tasks are given with less information. It is up to you to figure out how to create these figures.***

_____**6a.**(4pts) Create a heptagon using the polygon tool.
Then, create a regular heptagon using the regular polygon tool.
Measure each of the angles inside these two polygons.

_____**6b.**(2pts) CONJECTURE: What does it mean to be a regular polygon? (Place your answer in section #6.)

_____**7a.**(5pts) Create two parallel lines. YOU MUST USE PARALLEL LINE TOOL (Recommendation: create a line and a point not on the line prior to using the parallel line tool). Then create a segment crossing those two lines. Since the only lines that can appear on the document are the object separators you will need to place segments over these lines and hide all your lines. You may need some extra points to create the segments. It is also imperative to place two points at the intersection of these lines. (Both lines turn bold when you are at the intersection when placing points.) These three segments form 8 angles. Measure all 8 angles.

_____**7b.**(4pts) CONJECTURE: Describe in detail all the relationships you can find about the measurements of these special angles. You must describe at least 3 different observations. (Place your answer in section #7.)

_____**8.** Create a GeoGebra Person.

A. You must include these four new tools:

1.(3pts) **Perpendicular Bisector of a Segment** - Color the perpendicular bisector red. (Don't forget to overlay a segment and hide your line.) Color the segment yellow.

2.(2pts) **Congruent Segments** - Construct two congruent segments – color them green.

3.(3pts) **Square Inscribed in a Circle** – Color the square blue.

4.(1pts) **Import an image** – the picture should help me learn more about you

B.(2pts) Clear, organized, nice picture. This should help me get to know you more!
(1 extra credit point will be given to creative/interesting pictures.)