Week 6 Reflection
Links:

- https://www.geogebra.org/m/RtISr7GW#material/hqPfxIpp (Spherical Coordinates)
    - The demo utilizes both 3-D and 2-D components that help visualize the concept.
    - Everything (graphs side by side, sliders, etc) is placed conveniently and is very user friendly.
    - In the future, I'd like to use 2-D graphs to further illustrate concepts.
- https://www.geogebra.org/m/wQhtyqY6#material/tQWRhRzn (Partial Derivatives: Graphical Illustrator)
    - This demo creates a 3D surface based on user input, gives traces with x and y planes, creates tangent lines using partial derivatives, and also has the option to turn on a tangent plane.
    - Overall, this demo has everything you need to visualize and understand partial derivatives. It also allows you to enter your own custom function to see its shape and partial derivatives.
    - I'd like to use a similar color feedback system in my future demos. Having a different color for positive and negative values seems useful for the demo user.
- https://www.geogebra.org/m/RtISr7GW#material/gsypFXHC (Partial Derivatives and Slope)
    - This demo also uses a 2-D and a 3-D component that work together in a way that really makes sense
        - For a 2-D component, there is a point on an xy plane that the user can move
        - For the 3-D component, there is a function graphed in $R^3$ and the slope and partial derivative is shown at the point on the 2-D component
    - It is very simple and easy to use
    - In this demo, I thought the interaction between 2-D and 3-D components is something that worked really well together and it may be worth considering this for future demos
    - The use of different colors is a small and minor detail, but it can really help the visual aspect of a demo, so it is another thing to use going forward
- https://www.geogebra.org/m/RtISr7GW#material/TYfmF5Z2 (Geometric Interpretation of Cross Products)
    - This is a simple and clean demo relating the magnitude of a cross product to the area of a parallelogram created by the two crossed vectors.
    - Again, it provides a 3D graphic and a projection in the xy-plane to make visualization easier.
    - The demo is very simple to use—all you need to do is drag a couple points to make vectors.
    - I want to emphasize simplicity in my future demos. Dragging points is something that is very intuitive for the user.
- https://www.geogebra.org/m/RtISr7GW#material/Tsbi3UY9 (Curves in 3-space)
    - This demo is a representation of a parametric function in 3-D space
    - It allows the user to change the different functions in terms of t

- There is also a slider for t that can be adjusted to show the function at different t values
- Once again, this demo is much easier to use
    - It has a slider and boxes that make changing the function much easier

https://www.geogebra.org/m/RtISr7GW#material/J3kDCzjz (Level Curves)

- This demo illustrates the level curves of functions of two parameters (x and y)
- It also uses a 2-D and 3-D component
    - 2-D component shows the level curves projected down into the xy-plane
    - 3-D component shows the graph and a plane oscillating up and down the z-axis that shows the level curve at certain points (it was animated)
- There is a box where you can enter your own function which the demo then uses to create a graph and its level curves

Reflection:

Exploring these folders of multivariable calculus demos has been a very educational experience. These demos have really widened our perspectives on GeoGebra's capabilities, and our learning will help us improve our own creations. Although many of the demos use functions of GeoGebra that we are not experienced with, we can still try to replicate aspects of these demos in our own work.