Math 3450 **Video #3**
Winter 2021 **February 19**

Create an approximately 10-minute-long LOW RESOLUTION video of yourself exploring a numerical methods related topic not covered in class. In your video, you should:

1. Introduce yourself
2. Introduce the topic that you are going to describe
3. Describe some applications and uses of your topic
4. Discuss some theoretical aspects of your topic
5. Show some coded examples, applications, or proofs

Possible topics: Assigned on a first-come first-served basis.

1. Cooley-Tukey FFT algorithm (Nestor)
2. 2D FFT versus SVD compression (Hunter)
3. Video compression (Tatiana)
4. Search algorithms (Anthony)
5. Finite-difference methods for ODEs (Rachel)
6. Finite-difference methods for PDEs (Benjamin)
7. Newton fractals (Clara)
8. Optimizing the FFT in Julia and/or Python
9. Gaussian quadrature and other numerical integration techniques
10. Interpolation methods
11. Image compression/recognition (material beyond what is covered in class)
12. Using Julia and/or Python to write parallel code
13. Any other approved topic