CISC 2210 – Introduction to Discrete Structures

Reading Assignment: History of Math and Covid-19

1. Watch the four BBC episodes about the story of Maths by Marcus du Sautoy.

   - Wikipedia general description:
   - All episodes:
   - Episode 1 - “The Language of the Universe”: Marcus du Sautoy looks at how fundamental mathematics is to our lives, and then he explores the mathematics of ancient Egypt, Mesopotamia, and Greece.
     - https://www.youtube.com/watch?v=wQgc9DBXZu8 (51:16 minutes)
   - Episode 2 - “The Genius of the East”: This episode focuses on the development of mathematics in the East and the spread of Eastern Knowledge to the West through Italy.
     - https://www.youtube.com/watch?v=p62QItqtkQA (53:32 minutes)
   - Episode 3 - “The Frontiers of Space”: This episode focuses on the development of mathematical ideas in Europe, especially around the 16th - 19th centuries.
     - https://www.youtube.com/watch?v=MrIdc-Hs-is (51:55 minutes)
   - Episode 4 - “To Infinity and Beyond”: In this episode, Marcus du Sautoy looks at some of the twenty-three great unsolved problems that were posed by David Hilbert and confronted mathematicians in the 20th century.
     - https://www.youtube.com/watch?v=dsk31jaCxvE (41:57 minutes)

2. Watch these excellent but non-trivial 3-Blue 1-Brown three lectures from May 2020.

   - Exponential growth and epidemics
     - https://www.youtube.com/watch?v=KasOtIxDvrg&list=PLZHbQbGWtQ0cxQ136Vou3TdTRjkwSvT-1&index=1&t=6s (8:56 minutes)
   - Simulating an epidemic
     - https://www.youtube.com/watch?v=grAaSr5z67k&list=PLZHbQbGWtQ0cxQ136Vou3TdTRjkwSvT-2 (23:11 minutes)
   - The DP-3T algorithm for contact tracing
     - https://www.youtube.com/watch?v=D__UaR5MQao&list=PLZHbQbGWtQ0cxQ136Vou3TdTRjkwSvT-3 (7:18 minutes)