

MTH 337, Sample Quiz 8

Fall 2020

You will have **15 minutes** to take the actual quiz in Gradescope. The quiz will start exactly **5 minutes** after the start of class, 9:15 AM, and will close at 9:30 AM.

1. Calculate the next 5 terms on the sequence given by

$$x_n = 3x_{n-1} - 4x_{n-2}$$

provided that $x_0 = 0$ and $x_1 = 1$.

2. Write a function in Python syntax that calculate the first N terms of the Fibonacci sequence.
3. What is a bifurcation diagram?
4. Write a function in Python syntax to plot the bifurcation diagram depicting the dependence of the 5th term in the sequence in problem 1 on the parameter x_0 given a fixed value for x_1 .