

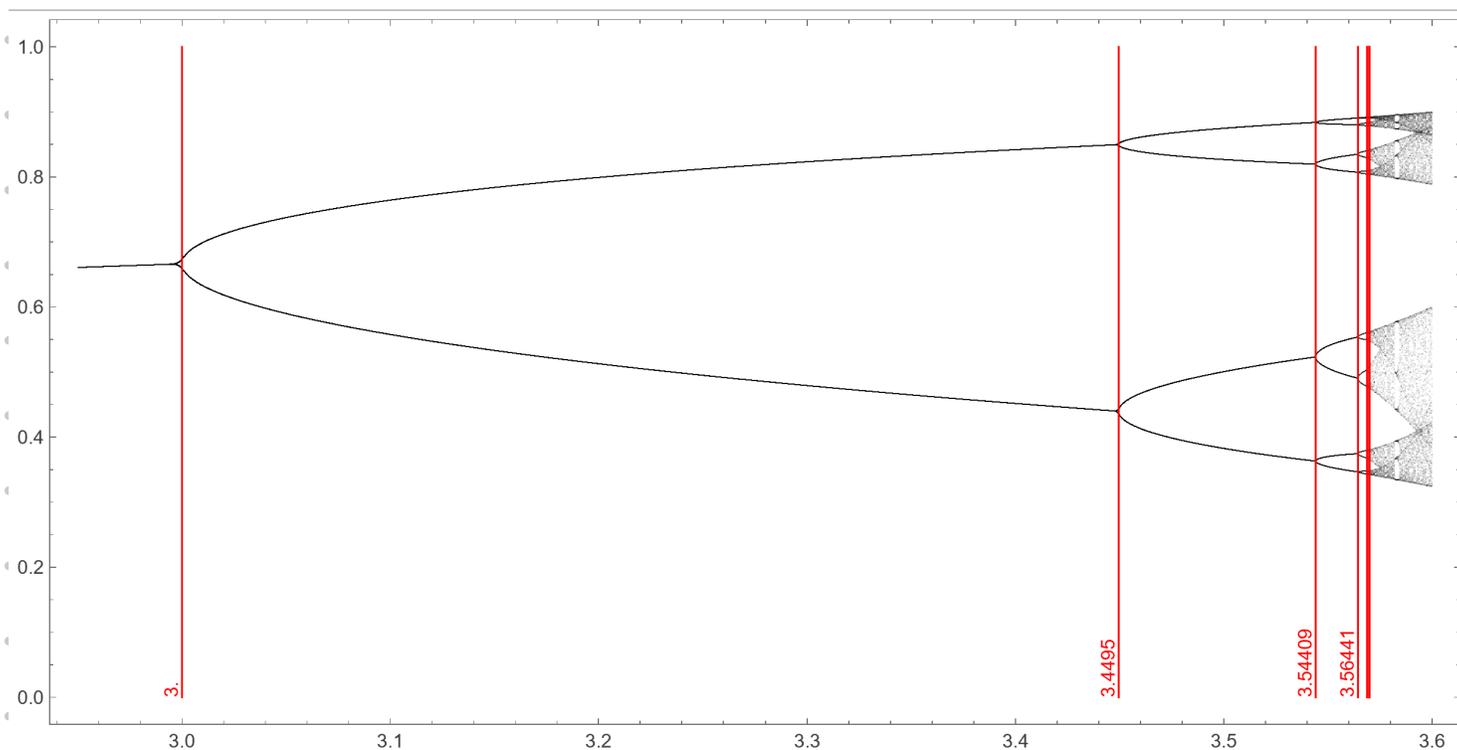
MATH 242 — 20 March 2026

DISCUSS:

What did you find most interesting in the Veritasium video on the logistic map?

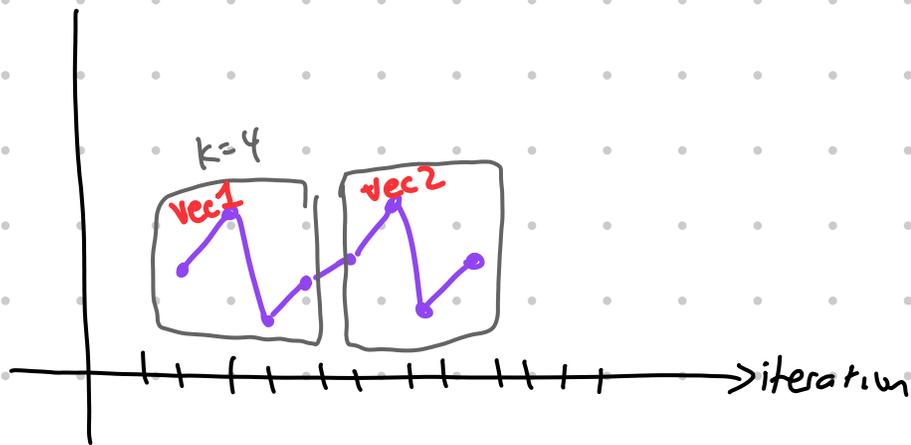
FEIGENBAUM CONSTANT:

4.669 201 ...



CYCLE DETECTION:

Does a trajectory repeat every k terms?



$$\begin{array}{l} \text{vec1} = \{-, -, -, -\} \\ \text{vec2} = \{-, -, -, -\} \end{array} \quad \left. \begin{array}{l} \downarrow \downarrow \downarrow \downarrow \\ \downarrow \downarrow \downarrow \downarrow \end{array} \right\} \text{are these nearly the same?}$$

$$\text{Subtract: } |\text{vec1} - \text{vec2}|$$

Are the components close to zero

(less than some small tolerance value)

If so, conclude that trajectory has k -cycle

FIND BIFURCATION:

