

# MA 137 Worksheet #7

Sections 2.2 and 3.1

9/8/20

1. Find all fixed points of the recursive sequence  $a_{n+1} = 13(a_n - 4a_n^2)$ . Use a table or other reasoning to decide which fixed point, if any, is the limiting value for the initial condition  $a_0 = 1$ .
2. Find all fixed points of the recursive sequence  $a_{n+1} = \sqrt{7a_n}$ ,  $a_0 = 1$  and use a table or other reasoning to decide which fixed point is the limiting value for the given initial condition.
3. Consider the recursive sequence  $a_{n+1} = \frac{5}{a_n}$ ,  $a_0 = 1$ . Find the fixed points of this recursion and investigate the limiting behavior of  $a_n$ .
4. Compute the following limit:  $\lim_{x \rightarrow 4} \frac{(4-x)^2}{16-x^2}$