

Chaos Assignment

June 27, 2000

For each of the following functions, find all fixed points and classify them as attracting, repelling, or neutral. Use the Attraction Theorem and the Repelling Theorem when they apply; in other cases, use a web diagram to assist you in drawing your conclusion.

1. $f(x) = x^2 - x/2$

2. $f(x) = x(1 - x)$

3. $f(x) = \frac{\pi}{2} \sin x$

4. $T(x) = \begin{cases} 2x & \text{if } x \leq 1/2 \\ 2 - 2x & \text{if } x > 1/2 \end{cases}$

5. $f(x) = -x + x^3$