Homework Problems.

1. Prove that if a continuous function has a point of period 3, it has a point of period 2 as well, as claimed in class.

2. Consider the following family of functions $T_h : [0,1] \to [0,1]$, known as the "cut-off tent functions:"

$$T_1(x) = \begin{cases} 2x, & x \in [0, 1/2] \\ 2 - 2x, & x \in [1/2, 1] \end{cases},$$

$$T_h(x) = \min(h, T_1(x)).$$

For what values of h does this map have no periodic points? For what values of h does this map contain points of every period? What happens to values of h in between these two values?