

Homework # 1 solutions to computer problems

B Figures are below. (a) There is a period 4 orbit that is stable. The basin of attraction is $(0, 1)$ less the fixed point $p = \frac{a-1}{a}$. (b) The iteration is fixed and the cobweb plot consist of a point. Note that if you increase the number of iterations you will accumulate round off error. This moves x_n away from the fixed point and the iteration will settle into the period 4 orbit.

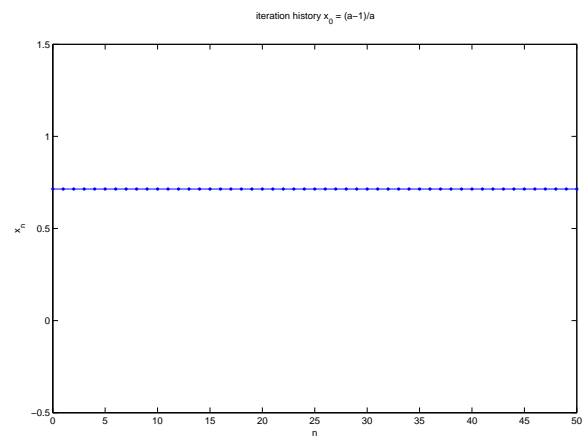
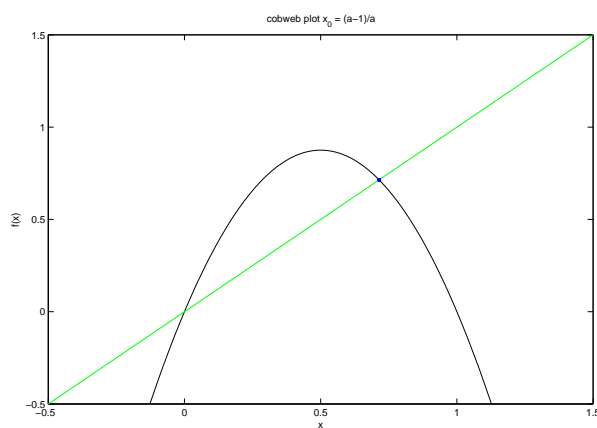
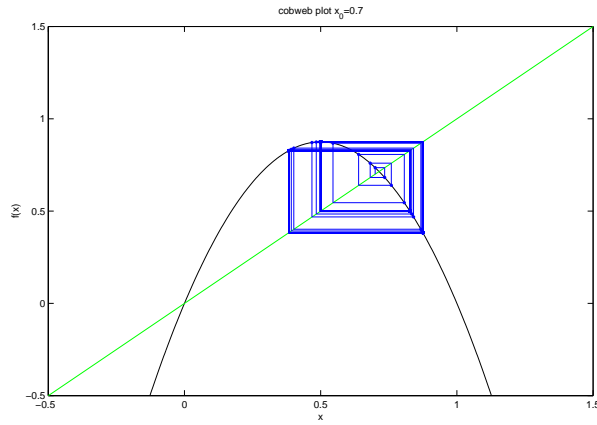
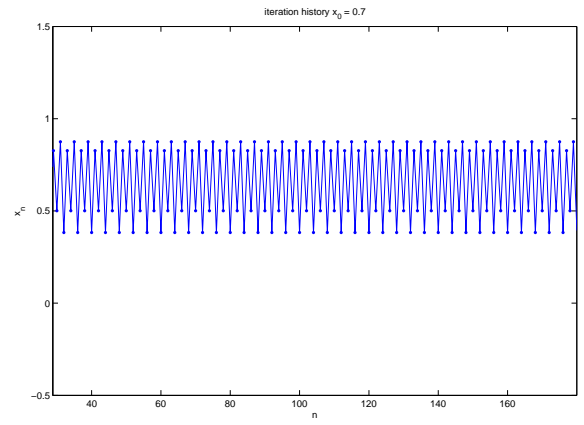


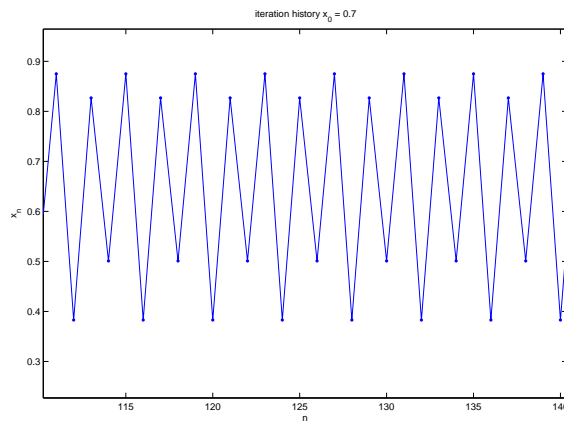
FIGURE 0.1. Plots for homework problem B when $x_0 = \frac{a-1}{a}$.



Cobweb plot



Plot of iteration



Zoom in on iteration to count the orbit

FIGURE 0.2. Plots for homework problem B when $x_0 = 0.7$.