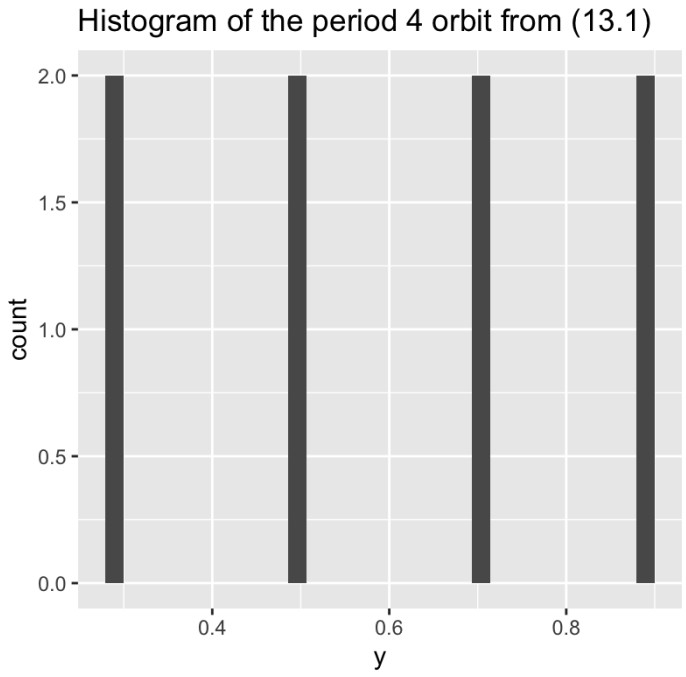
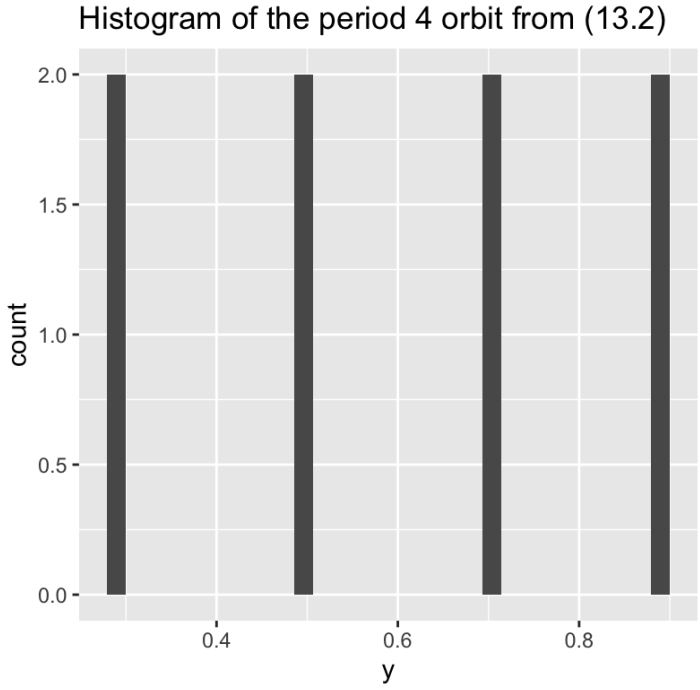
Chapter 13

(13.1) An orbit of a dynamical system is attracted to (13.2) a periodic cycle of period 4. The periodic orbit is: …0.3, 0.5, 0.7, 0.9, 0.3, 0.5, 0.7, 0.9… Sketch a histogram for this orbit.



(13.2) An orbit of a dynamical systems is attracted to a periodic cycle of period 4. The periodic orbit is: …0.3, 0.9, 0.5, 0.7, 0.3, 0.9, 0.5, 0.7… Sketch a histogram for this orbit. Compare this histogram with the one you drew for Exercise 13.1.



The histograms are identical.

(13.4) Figure 13.11 shows histograms of the orbits of the logistic equation with four different parameter values, r = 3.58, 3.67, 3.70, and 3.90. By looking at the bifurcation diagram (Fig. 11.4), determine which histogram goes with which parameter value.

a) r = 3.67

b) r = 3.70

c) r = 3.58

d) r = 3.90