MATH336 - Homework #7

1.

a. $x(n+1) = \frac{5}{2}x(n)(1-x(n))$

$x=0$; unstable

$x=\frac{3}{5}$; stable

b. $x(n+1) = \frac{29}{10}x(n)(1-x(n))$

$x=0$; unstable

$x=\frac{19}{29}$; stable

c. $x(n+1) = \frac{21}{10}x(n)(1-x(n))$

$x=0$; unstable

$x=\frac{21}{31}$; unstable

2.

a. $x(n+1) = \frac{1}{5}x^3 - \frac{6}{5}x^2 + \frac{16}{5}x - \frac{6}{5}$

$x=1$; unstable

$x=2$; stable

$x=3$; unstable

b. $x(n+1) = \frac{1}{8}x^3 - \frac{5}{4}x^2 + \frac{39}{8}x - \frac{15}{4}$

$x=2$; unstable

$x=3$; stable

$x=5$; unstable