

## Problem 20

For the initial value problem in Problem 18, plot  $u'$  versus  $u$  for  $\omega = 0.7$ ,  $\omega = 0.8$ , and  $\omega = 0.9$ . Such a plot is called a phase plot. Use a  $t$  interval that is long enough so that the phase plot appears as a closed curve. Mark your curve with arrows to show the direction in which it is traversed as  $t$  increases.