direction; this is consistent with the behavior of the linear approximation near the origin. The other trajectory passes through \((-3, 2)\) and spirals inward, again in the clockwise direction. Both trajectories approach a closed curve that corresponds to a stable periodic solution. In Figure 9.7.3 we show the plots of \(u\) versus \(t\) for the solutions corresponding to the trajectories in Figure 9.7.2. The solution that is initially smaller gradually increases in amplitude, while the larger solution gradually decays. Both solutions approach a stable periodic motion that corresponds to the limit cycle. Figure 9.7.3 also shows that there is a phase difference between the two solutions as they approach the limit cycle. The plots of \(u\) versus \(t\) are nearly sinusoidal in shape, consistent with the nearly circular limit cycle in this case.

Figures 9.7.4 and 9.7.5 show similar plots for the case \(\mu = 1\). Trajectories again move clockwise in the phase plane, but the limit cycle is considerably different from a