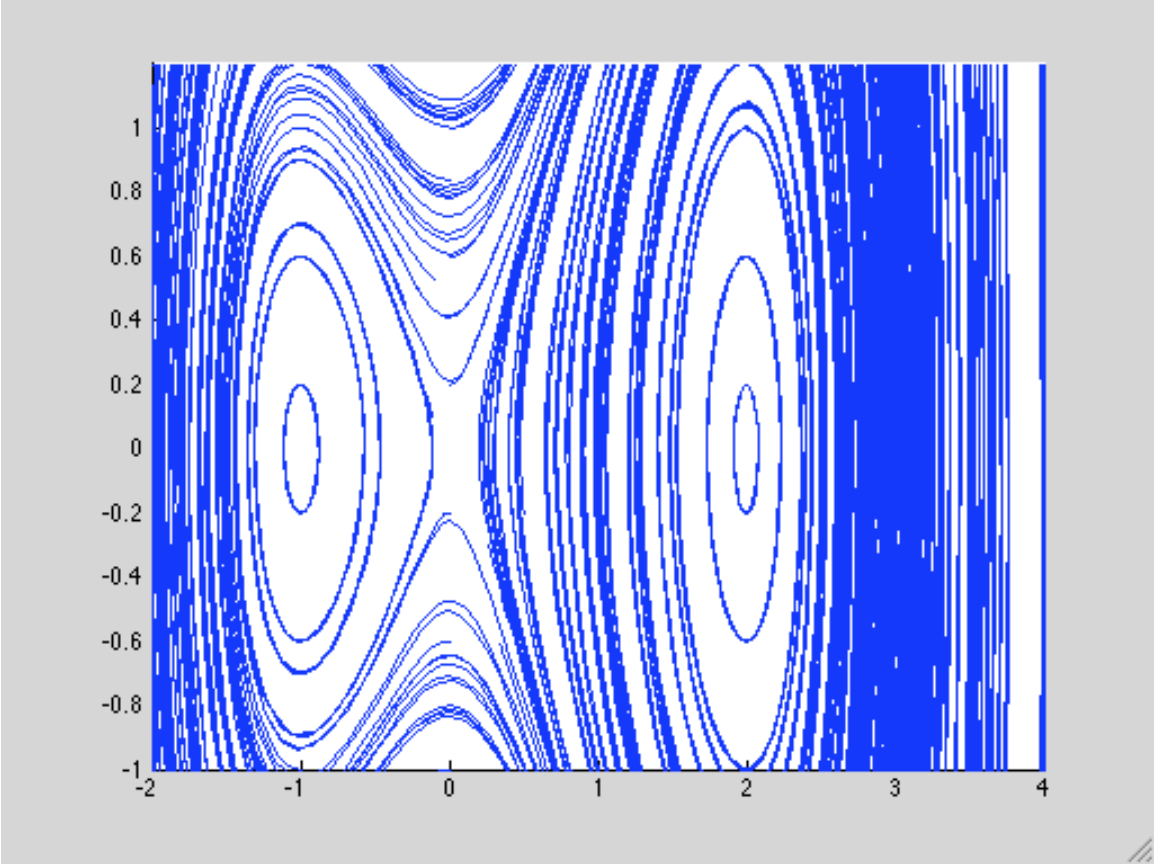
Mollie Semmes
Peng Gao- 10am

```
warning off all
f=@(t,x) [x(2);-c*(x(2))^3-x(1)*(x(1)+1)*(x(1)-2)];
figure; hold on
for a=-1:.5:4
   for b=-1:0.4:4
for c=0:.1:1
      [t, xa]=ode45(f, [0 10], [a b]);
      plot(xa(:,1), xa(:,2))
      [t, xa]=ode45(f, [0 -5], [1 b]);
      plot(xa(:,1), xa(:,2))
   end
end
end
axis([-2 4 -1 1.2])
```



There are two centers of rotation in the graph around x=-1 and x=2. These are the critical points of the system. As c increases, the radius of the oval increases, so the value over which the population(I am assuming this is a population problem) is increasing and decreasing is increased. So as time goes on, the population experiences two jumps in population and then decreases.