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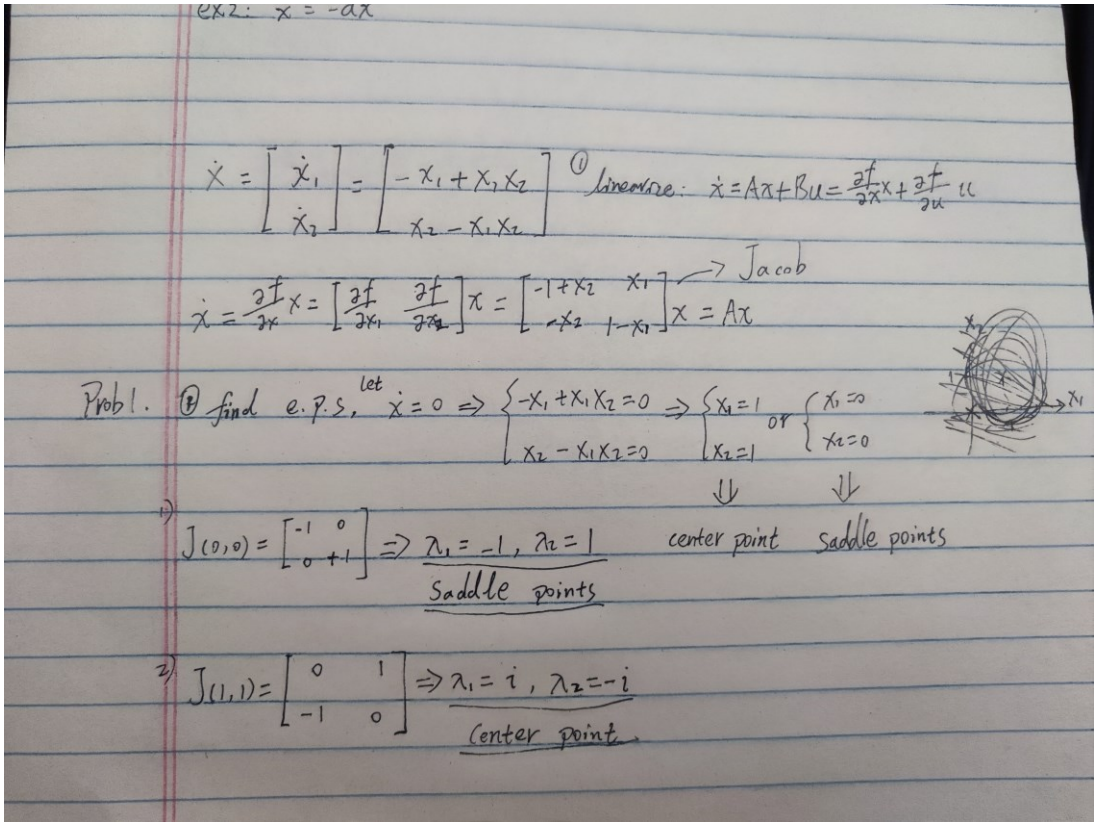
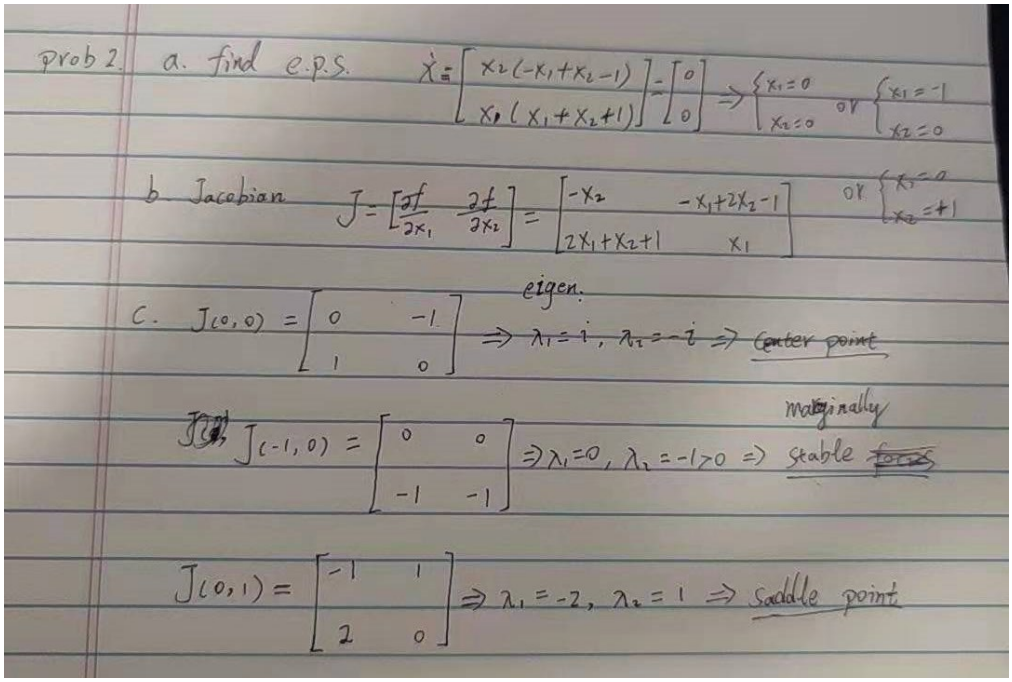
HW3

Prob1:



Prob2:



Prob3:

```
function [t,x] = HW3_3()
clc
close all
tspan = [0 50];
for i = -3:0.3:3
    for j = -3:0.3:3
        x0 = [i,j];
        [t, x] = ode23(@HW33,tspan,x0);
        plot(x(:,1),x(:,2),'b'); hold on
    end
end
xlabel('x1')
ylabel('x2')
title('')
axis([-5 5 -5 5])

function dx = HW33(tspan,x)

dx = [x(2)*(-x(1)+x(2)-1); x(1)*(x(1)+x(2)+1)];
end
end
```