ENGR 232: Lab 5 Prelab Solutions

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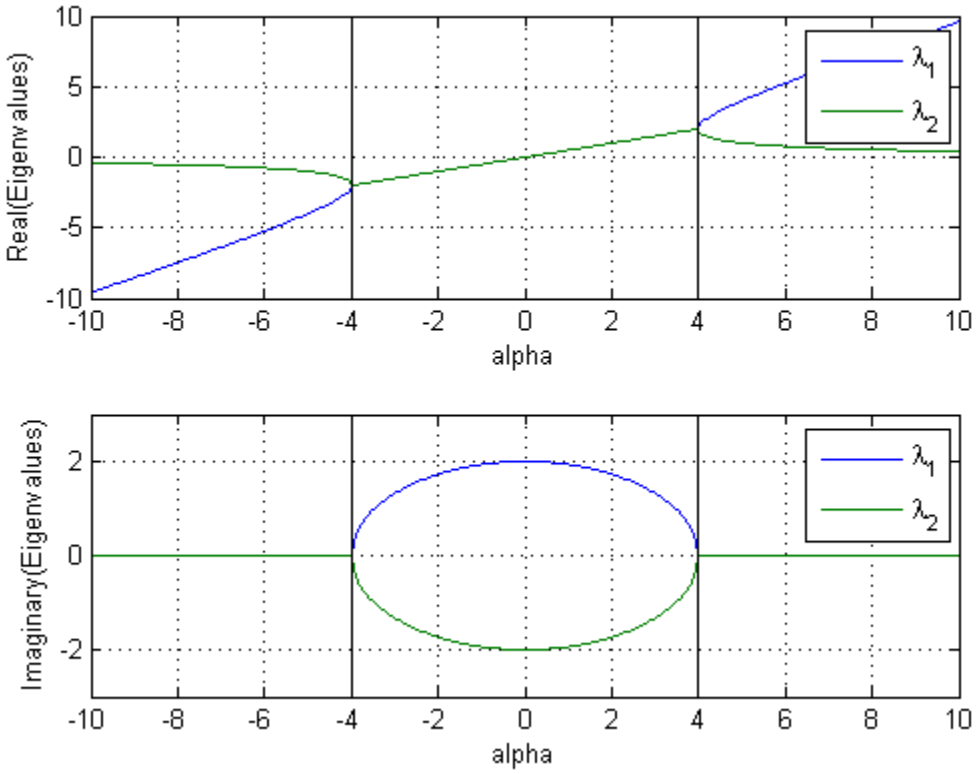
Generating the Eigenvalues

Similar to ENGR 231's Lab 4 when we used rref and a for loop. We'll be doing something similar here

```
clear, clc
alpha=-10:0.05:10;

d = zeros(2,numel(alpha));

for ii=1:numel(alpha)
    A = [alpha(ii) 2; -2 0];
    d(:,ii) = eig(A);
end
```

Plotting all Results

```
subplot(2,1,1)
plot(alpha,real(d),[-4 -4],[-10 10],'k-',[4 4],[-10 10],'k-')
legend('\lambda_1', '\lambda_2')
xlabel('alpha')
ylabel('Real(Eigenvalues)')
grid on


subplot(2,1,2)
plot(alpha,imag(d),[-4 -4],[-10 10],'k-',[4 4],[-10 10],'k-')
legend('\lambda_1', '\lambda_2')
xlabel('alpha')
ylabel('Imaginary(Eigenvalues)')
axis([-10 10 -3 3])
grid on
```



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