

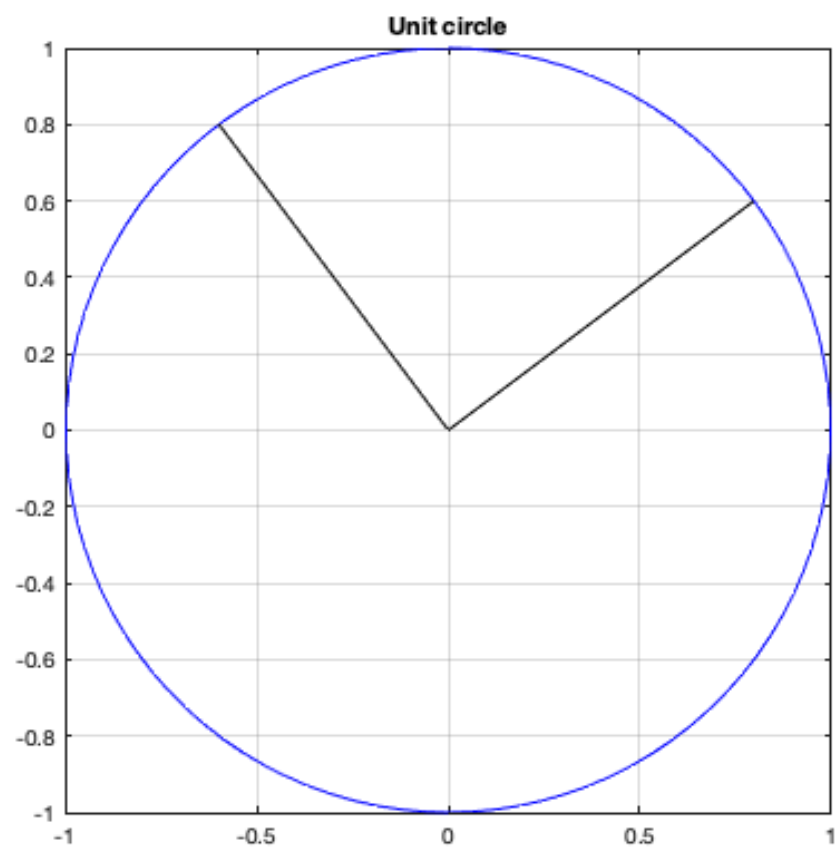
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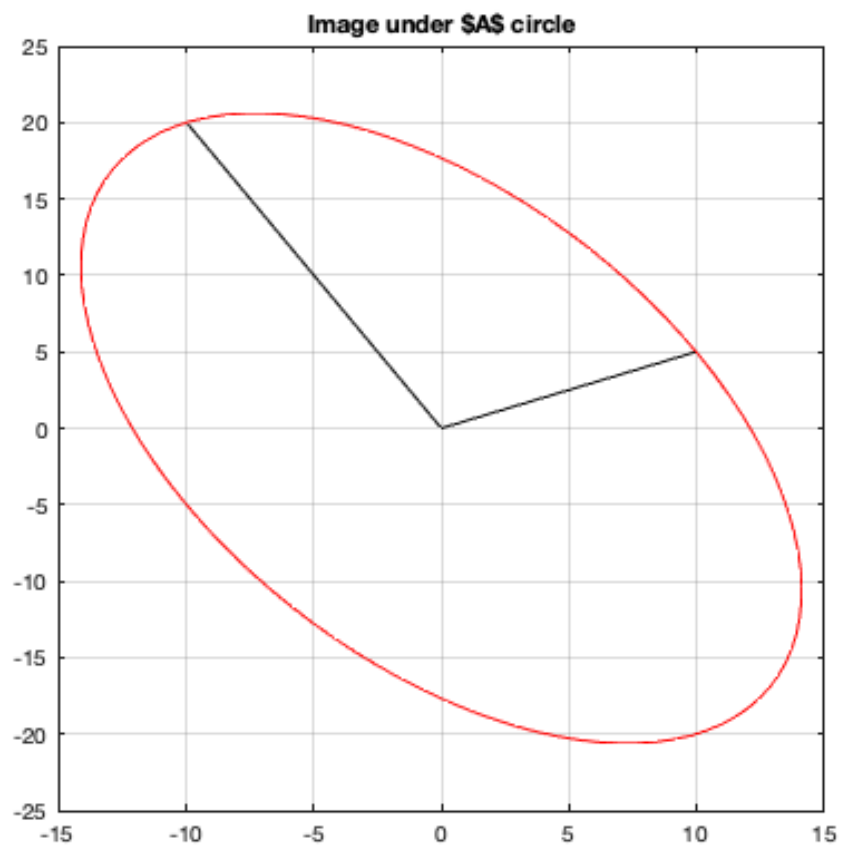
```
clear all;close all;clc

A = [14 -2; -8 19];
[U,S,V]=svd(A);

S=diag(S);
n = 100; z = exp(1i*(0:n)*2*pi/n);
x = [real(z);imag(z)];
% Image of the unit circle under A
y = A*x;
% Plot of the unit circle
figure(1);
plot(x(1,:),x(2:,:), 'b-'), axis square, title('Unit circle'), hold on
plot([0,V(1,1)], [0,V(2,1)], 'k')
plot([0,V(1,2)], [0,V(2,2)], 'k')
grid on

figure(2)
plot(y(1,:),y(2:,:), 'r-'), axis square, title('Image under $A$ circle'),hold on
plot([0,S(1)*U(1,1)], [0,S(1)*U(2,1)], 'k')
plot([0,S(2)*U(1,2)], [0,S(2)*U(2,2)], 'k')
grid on
```





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