

Math 210 Notes for CAS Homework 9

The blue circle is transformed to an ellipse in each case.

```
clearvars
A1=[3 -1; -1 2]; A2=[.9 .4; -2 1]; A3=[3 -2;1 4]; A4=[4 0;0 .3];
theta=[0:2*pi/50:2*pi];
circle=[cos(theta); sin(theta)];
subplot(2,2,1)
ellipse=A1*circle;
plot(circle(1,:), circle(2,:), ellipse(1,:), ellipse(2,:))
axis([-4 4 -4 4]);axis('square')
subplot(2,2,2)
ellipse=A2*circle;
plot(circle(1,:), circle(2,:), ellipse(1,:), ellipse(2,:))
axis([-3 3 -3 3]);axis('square')
subplot(2,2,3)
ellipse=A3*circle;
plot(circle(1,:), circle(2,:), ellipse(1,:), ellipse(2,:))
axis([-5 5 -5 5]);axis('square')
subplot(2,2,4)
ellipse=A4*circle;
plot(circle(1,:), circle(2,:), ellipse(1,:), ellipse(2,:))
axis([-4 4 -4 4]);axis('square')
```

