Eigen decomposition

In [ ]:
```
import numpy as np
from numpy import *
```

In [ ]:
```
# Creating matrix
a = np.matrix([[2, 7],[1, -2]])

# Calculating value and vector
val, vec = np.linalg.eig(a)
print("Eigen Value = ", val)
print("Eigen Vector = ", vec)
```

```
Eigen Value =  [ 3.31662479 -3.31662479]
Eigen Vector =  [[ 0.98276713 -0.79634714]
 [ 0.18484794  0.60483985]]
```

In [ ]:
```
# Creating matrix
b = np.matrix([[2, 2], [5, -1]])

# Calculating value and vector
val, vec = np.linalg.eig(b)
print("Eigen Value = ", val)
print("Eigen Vector = ", vec)
```

```
Eigen Value =  [ 4. -3.]
Eigen Vector =  [[ 0.70710678 -0.37139068]
 [ 0.70710678  0.92847669]]
```

In [ ]:
```
# Creating matrix
c = np.matrix([[-2, -4, 2], [-2, 1, 2], [4, 2, 5]])

# Calculating value and vector
val, vec = np.linalg.eig(c)
print("Eigen Value = ", val)
print("Eigen Vector = ", vec)
```

```
Eigen Value =  [-5.  3.  6.]
Eigen Vector =  [[ 0.81649658  0.53452248  0.05842062]
 [ 0.40824829 -0.80178373  0.35052374]
 [-0.40824829 -0.26726124  0.93472998]]
```