

```
>> syms x y z t lambda L
>> A=[ 3 2; 5 1]
```

A =

$$\begin{bmatrix} 3 & 2 \\ 5 & 1 \end{bmatrix}$$

```
>> [xi,R]=eig(sym(A))
```

xi =

$$\begin{bmatrix} 1/5 - 11^{1/2}/5, & 11^{1/2}/5 + 1/5 \\ 1, & 1 \end{bmatrix}$$

R =

$$\begin{bmatrix} 2 - 11^{1/2}, & 0 \\ 0, & 11^{1/2} + 2 \end{bmatrix}$$

```
>> B=[3 -2; 5 -1]
```

B =

$$\begin{bmatrix} 3 & -2 \\ 5 & -1 \end{bmatrix}$$

```
>> [xi,R]=eig(sym(B))
```

xi =

$$\begin{bmatrix} 2/5 - (6^{1/2}*i)/5, & (6^{1/2}*i)/5 + 2/5 \\ 1, & 1 \end{bmatrix}$$

R =

$$\begin{bmatrix} 1 - 6^{1/2}*i, & 0 \\ 0, & 6^{1/2}*i + 1 \end{bmatrix}$$

```
>> C=[3 -2 0; 2 -2 0; 0 1 1]
```

C =

$$\begin{bmatrix} 3 & -2 & 0 \\ 2 & -2 & 0 \\ 0 & 1 & 1 \end{bmatrix}$$

```
>> [xi,R]=eig(sym(C))
```

```
xi =
```

```
[ 0, 2, -1]
```

```
[ 0, 1, -2]
```

```
[ 1, 1, 1]
```

```
R =
```

```
[ 1, 0, 0]
```

```
[ 0, 2, 0]
```

```
[ 0, 0, -1]
```

```
>>
```