

```
>> P=randn(4);  
>> det(P)
```

```
ans =
```

```
-0.448650846699012
```

```
>> A=randn(4);  
>> D=(P^-1)*A*P;  
>> det(D)
```

```
ans =
```

```
-1.29678526521628
```

```
>> det(A)
```

```
ans =
```

```
-1.29678526521628
```

```
>> rank(D)
```

```
ans =
```

```
4
```

```
>> rank(A)
```

```
ans =
```

```
4
```

```
>> trace(A)
```

```
ans =
```

```
1.91379424226905
```

```
>> trace(D)
```

```
ans =
```

```
1.91379424226905
```

```
>> charpoly(D)
```

```
ans =
```

```
Columns 1 through 4
```

```
1 -1.91379424226905 ✓  
-1.41202631027173 5.84413184888347
```

```
Column 5
```

```
-1.29678526521628
```

```
>> charpoly(A)
```

```
ans =
```

```
Columns 1 through 4
```

```
1 -1.91379424226905 ✓  
-1.41202631027173 5.84413184888347
```

```
Column 5
```

```
-1.29678526521628
```

```
>> [V,D] = eig(A);
```

```
>> [V1,D1] = eig(D);
```

```
>> D
```

```
D =
```

```
Columns 1 through 2
```

```
1.63386640976399 + 0.851356883018838i ✓  
0 + 0i  
0 + 0i ✓  
1.63386640976399 - 0.851356883018838i  
0 + 0i ✓  
0 + 0i  
0 + 0i ✓  
0 + 0i
```

Columns 3 through 4

```
0 + 0 + 0i ✓
0 + 0i 0 + 0i ✓
0 + 0i 0 + 0i ✓
0 + 0.239727057334574 + 0i ✓
0 + 0i 0 + 0i ✓
-1.5936656345935 + 0i
```

>> D1

D1 =

Columns 1 through 2

```
1.63386640976399 + 0.851356883018838i ✓
0 + 0i 0 + 0i ✓
1.63386640976399 - 0.851356883018838i 0 + 0i ✓
0 + 0i 0 + 0i ✓
0 + 0i
```

Columns 3 through 4

```
0 + 0i ✓
0 + 0i 0 + 0i ✓
0 + 0i 0 + 0i ✓
0 + 0.239727057334574 + 0i ✓
0 + 0i 0 + 0i ✓
-1.5936656345935 + 0i
```

>>