Inserisco la matrice del sistema tempo discreto

In[•]:=
```
A = {{1/8, 1/8}, {-13/8, 3/8}}
```

Out[•]=

$$\left\{\left\{\frac{1}{8}, \frac{1}{8}\right\}, \left\{-\frac{13}{8}, \frac{3}{8}\right\}\right\}$$

calcolo il polinomio caratteristico di A e i suoi autovalori

In[•]:=
```
CharacteristicPolynomial[A, λ]
```

Out[•]=

$$\frac{1}{4} - \frac{\lambda}{2} + \lambda^2$$

In[•]:=
```
λ = Eigenvalues[A]
```

Out[•]=

$$\left\{\frac{1}{4}\left(1 + i\sqrt{3}\right), \frac{1}{4}\left(1 - i\sqrt{3}\right)\right\}$$

Mi calcolo modulo e argomento del primo autovalore (l'ho scelto io)

In[•]:=
```
ρ = Abs[λ[[1]]]
```

Out[•]=

$$\frac{1}{2}$$

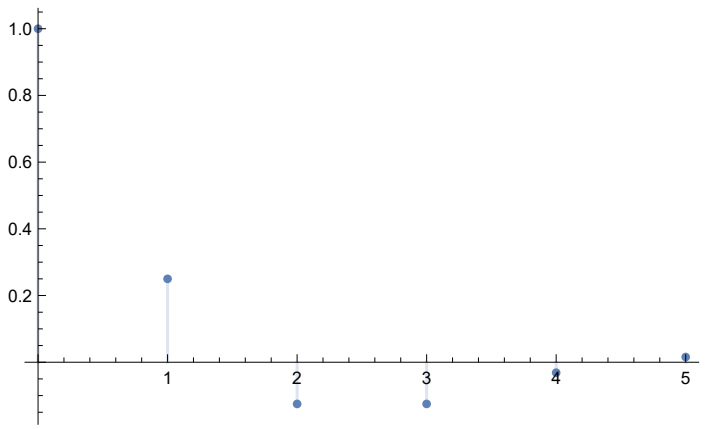
In[•]:=
```
θ = Arg[λ[[1]]]
```

Out[•]=

$$\frac{\pi}{3}$$

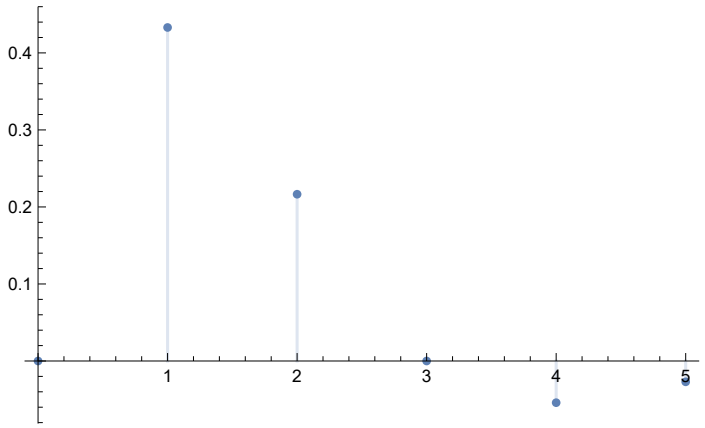
In[•]:=
```
DiscretePlot[ρ^k Cos[θ k], {k, 0, 5}]
```

Out[•]=



In[•]:=
```
DiscretePlot[ρ^k Sin[θ k], {k, 0, 5}]
```

Out[•]=



In[•]:=
```
DiscretePlot[Cos[θ k], {k, 0, 15}]
```

Out[•]=