Cobweb Process

```python
import matplotlib.pyplot as plt
from scipy import cos, linspace

def cobweb(f, x0, N, a=0, b=1):
        # plot the function being iterated
        t = linspace(a, b, N)
        plt.plot(t, f(t), 'k')

        # plot the dotted line y = x
        plt.plot(t, t, "k:")

        # plot the iterates
        x, y = x0, f(x0)
        for _ in range(N):
            fy = f(y)
            plt.plot([x, y], [y,  y], 'b', linewidth=1)
            plt.plot([y, y], [y, fy], 'b', linewidth=1)
            x, y = y, fy

        plt.axes().set_aspect(1)
        plt.show()
        plt.close()


cobweb(cos, 1, 20)



# one fixed point
cobweb(lambda x: 2.9*x*(1-x), 0.1, 100)

# converging to two-point attractor
cobweb(lambda x: 3.1*x*(1-x), 0.1, 100)

# starting exactly on the attractor
cobweb(lambda x: 3.1*x*(1-x), 0.558, 100)

# in the chaotic region.
cobweb(lambda x: 4.0*x*(1-x), 0.1, 100)
```