Chapter 24: The Hénon Map

Worksheet to accompany

David Feldman, *Chaos and Fractals: An Elementary Introduction*,
Oxford University Press, 2012

The Hénon Map is given by:

$$\begin{aligned}
x_{n+1} &= y_n + 1 - ax_n^2 \\
y_{n+1} &= bx_n \ .
\end{aligned} \tag{1}$$

We will fix the parameters a and b at

$$a = 1.4 \quad \text{and } b = 0.3 \ . \tag{2}$$

1. Calculate the first few orbits of the seed $x_0 = -1$, $y_0 = 0$.

2. Calculate the first few orbits of the seed $x_0 = 1$, $y_0 = -0.4$.