

ASSIGNMENT 7

Tutorial session October 10th — not for assessment

1. Using *Chaos for Java*, check that the first two period doublings of the Hénon map (with $b = 0.3$) take place at $a_1 = 0.3675$ and $a_2 = 0.9125$, as claimed in lectures.
 - (i) For the first, check that the fixed point (x_+^*, y_+^*) has $\lambda_- = -1$ when $a = 0.3675$, and that $\lambda_- > -1$ when a is a little less than a_1 , with $\lambda_- < -1$ when a is a little greater than a_1 .
 - (ii) For the second, use the same technique as for (i), except that now you are looking at the change of stability of fixed points of the second composition map, as a passes through a_2 .
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