Nonlinear Dynamics: Mathematical and Computational Approaches

Lead instructor: Liz Bradley

Quiz scores are NOT recorded.

- You may come back to quizzes and take them as many times as you like
- When you are finished, clicking the "Score" button at the bottom of the test will show you the correct responses.

Question 1

Do conservative systems have attractors?

- A. Yes
- ✔ B. No

Question 2

Can conservative systems be chaotic?

- ✔ A. Yes
- B. No

Question 3

How do you know if a point is a fixed point of the dynamics?

- A. The trajectory starts there
- ✔ B. Trajectories never leave that state
- C. If the system is at that state and you perturb it, that perturbation will shrink

Question 4

How do you know if a point is a stable fixed point of the dynamics?

- A. The trajectory starts there
- B. Trajectories never leave that state
- ✔ C. If the system is at that state and you perturb it, that perturbation does not grow and trajectories never leave that state without external influence

Question 5

The following points in the state space of the damped pendulum are:

(a)

$\theta = 0, \omega = 0$

- ✔ A. Stable fixed point
- B. Unstable fixed point
- C. Not a fixed point

(b)

$\theta = 0, \omega = \pi$

- A. Stable fixed point
- B. Unstable fixed point
- ✔ C. Not a fixed point

(c)

$\theta = \pi, \omega = 0$

- A. Stable fixed point
- ✔ B. Unstable fixed point
- C. Not a fixed point

(d)

$\theta = 2\pi, \omega = 0$

- ✔ A. Stable fixed point
- B. Unstable fixed point
- C. Not a fixed point

(e)

$\theta = 3\pi, \omega = 0$

- A. Stable fixed point
- ✔ B. Unstable fixed point
- C. Not a fixed point

You got 9 out of 9 questions correct Reset