Rajesh Shashi Kumar   Logout

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Nonlinear Dynamics: Mathematical and Computational Approaches
Lead instructor: ✉ Liz Bradley

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✓ 4.3 Stable and unstable manifolds » Quiz

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Quiz scores are NOT recorded.
- You may come back to quizzes and take them as many times as you like
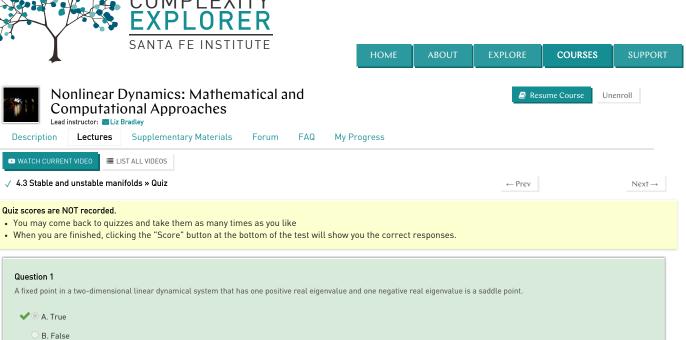- When you are finished, clicking the "Score" button at the bottom of the test will show you the correct responses.

Question 1
A fixed point in a two-dimensional linear dynamical system that has one positive real eigenvalue and one negative real eigenvalue is a saddle point.

✔ ⦿ A. True
○ B. False

Question 2
A fixed point in a two-dimensional nonlinear dynamical system that has one positive real eigenvalue and one negative real eigenvalue is a saddle point. (*Experts*: assume that the nonlinear system can be linearized at the fixed point.)

✔ ⦿ A. True
○ B. False

Question 3
The point Θ = π, ω = 0 in the pendulum is a saddle point.

✔ ⦿ A. True
○ B. False

Question 4
The point Θ = π, ω = 0 is the pendulum's *only* saddle point.

○ A. True
✔ ⦿ B. False

Question 5
Stable and unstable manifolds are the same thing as stable and unstable eigenvectors.

○ A. True
✔ ⦿ B. False

Question 6
A point that starts on an unstable manifold will always stay on that unstable manifold.

✔ ⦿ A. True
○ B. False

Question 7
The distance between a fixed point and a point near that fixed point on its stable manifold will grow with time.

○ A. True
✔ ⦿ B. False

Question 8
The distance between a fixed point and a point near that fixed point on its unstable manifold will grow with time.

✔ ⦿ A. True

○ B. False

Question 9

If a fixed point's stable manifold connects back around and becomes its own unstable manifold, that's called a heteroclinic orbit.

✘ ⦿ A. True

○ **B. False**

You got **8** out of **9** questions correct   Reset

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