You are enjoying an afternoon visit to a science museum. In one wing of the museum is an atrium containing a rather large, very tall pendulum suspended from the ceiling. As you walk up to the pendulum, you notice that it gently swings back and forth along a plane running due north and due south.

You leave the atrium to see other parts of the museum and then return to the pendulum two hours later.

Do you think the pendulum will continue oscillating due north and south? (Ignore all effects due to friction.)

If so: Explain why you think so.

If not: How will the oscillation of the pendulum be different from before? Be as specific as you can in your answer. Explain your reasoning. Draw a diagram if it will make your explanation clearer.