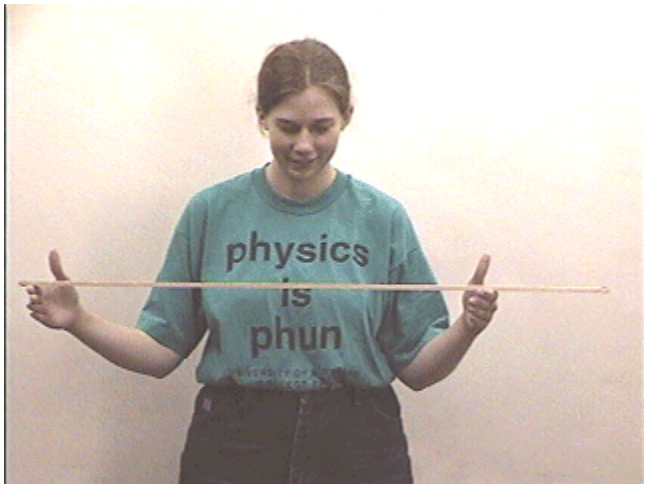
Answer #23

The answer is (c): the meter stick will remain balanced as Gwen brings her fingers together, as seen on an mpeg video that can be viewed by clicking on the picture below.



The finger closer to the center of the meter stick supports more of the weight, so that one has more frictional force with the meter stick and the other one slides. This continues until the sliding finger moves closer to the center, and the situation reverses. The two fingers alternately slide and stick until both fingers contact at the center.

Try placing a weight on one end of the meter stick and repeating this process. What will happen?

The same thing will happen, except that the fingers will come together under the center of mass of the weighted meter stick. In the simple case of the unweighted meter stick the center of mass is at the center of the stick. In fact, this is one way to find the center of mass of a complex object.

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For questions and comments regarding the *Question of the Week* contact
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given on the Lecture-Demonstration Home Page.