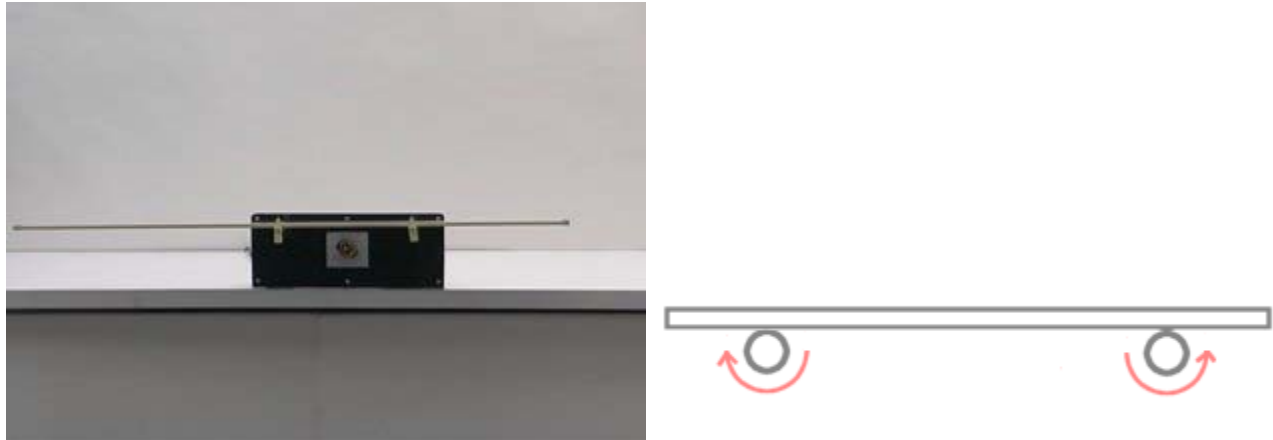


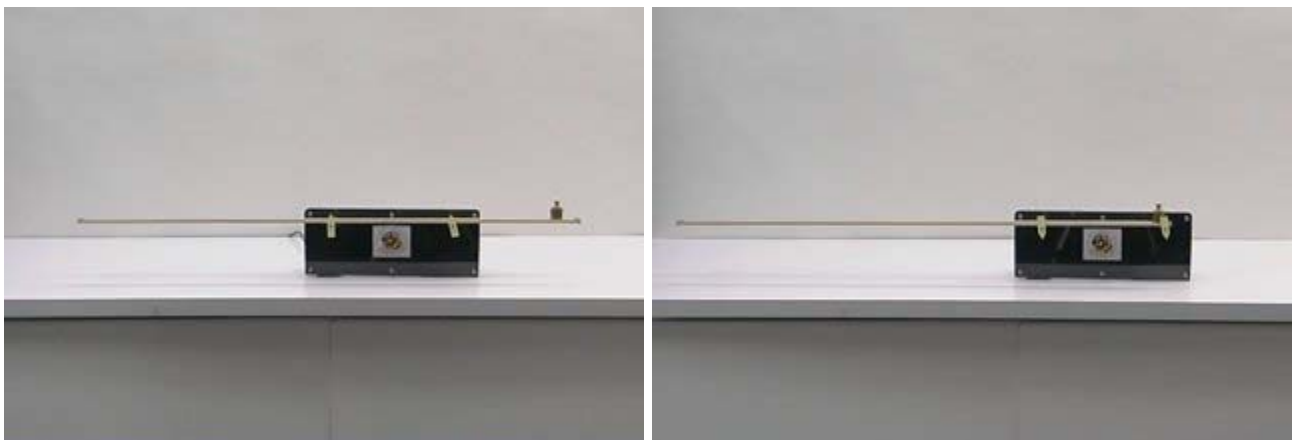
Answer #216

The answer is (d): The meter stick will remain balanced, as can be seen by clicking on the photograph below to see an mpeg video of the action, but it will move toward the center so that it is symmetrically balanced. The meter stick has first been balanced asymmetrically on the supports, then the supports are started into rotation after the mpeg has begun.



In contrast with the case of Question 215, note that this situation is basically stable. If more of the weight of the meter stick is on one of the rotors, it will experience more force, and the meter stick will move toward the center. If the motion overshoots the position of symmetry, the opposite situation will occur, and the meter stick will again move toward the center. If the meter stick were ever to obtain the position of symmetry, it would stay there. If you look carefully, you will see it moving back and forth very slightly about the position of symmetry.

Can you determine theoretically what would happen to the meter stick if an extra weight were positioned toward the end of the meter stick before doing the experiment? After thinking through your answer, click on one of the two extreme starting positions below to see an mpeg of the experiment.



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For questions and comments regarding the *Question of the Week* contact [Dr. Richard E. Berg](#) by e-mail or using phone number or regular mail address given on the [Lecture-Demonstration Home Page](#).