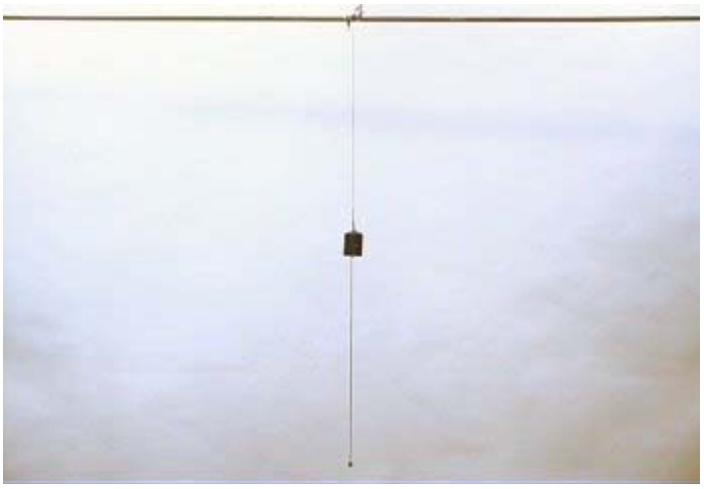
# Answer #245

The answer is (b): the small mass will swing wildly after a short time, as seen in an mpeg video by clicking your mouse on the photograph below.



Because the two pendula are to same length, they are *in resonance*, and the kinetic energy will be transferred back and forth between the two pendula. Because the lower pendulum is much less massive, it will attain a much larger amplitude when the energy is transferred to it. As the energy is transferred back to the more massive pendulum the process is reversed, and the larger amplitude of the lower pendulum becomes a much smaller motion of the larger pendulum, as can be seen in the video.

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Archive 13

Question of the Week

Outreach Index Page

Lecture-Demonstration Home Page



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