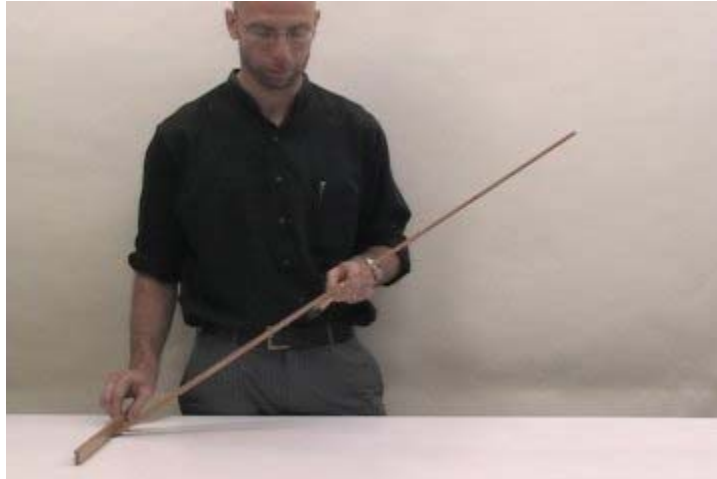# Answer #319

The answer is (a): The shorter stick will reach the table first, as seen in a slow-motion mpeg video by clicking your mouse on the photograph below.

The answer is very similar to the answer for Question #317. As in Question #317, although the two meter sticks have the same geometry, the dynamics of this situation does not scale. The angular acceleration of such a stick is equal to the torque divided by its moment of inertia, except that that moment of inertia and the torque must be taken about the *center* of the stick. The moment of inertia of a stick about its center is proportional to the square of the length of the stick, but the torque increases only linearly with length. The angular acceleration therefore is proportional *inversely* to the length of the stick, so the longer the stick the more slowly it accelerates, the same as for Question #317, in which the rotation is taken around the end of the stick, which is held in place.