Answer #50

The answer is (a): the spool will move in the forward direction, just as it does with the rope wound in the opposite direction so that it comes out from the top, as can be seen in an mpeg video by clicking your mouse on the photograph below.



If you consider the torque around the point of contact between the spool and the table top, you can see that in both of the cases described here the torque will cause the spool to roll in the same direction.

Suppose that you lift the end of the rope up so that the rope is aimed at the point where the spool and the table top make contact. There is now no torque about the point of contact, so the rope will unwind from the spool while the spool rotates but remains in the same position, as can be seen in the video below. Click <u>here</u> to see an mpeg video of the action.

Archive 3

Question of the Week

Outreach Index Page

Lecture-Demonstration Home Page



For questions and comments regarding the *Question of the Week* contact <u>Dr. Richard E. Berg</u> by e-mail or using phone number or regular mail address given on the <u>Lecture-Demonstration Home Page</u>.