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Question: A ball is attached to a pole by a string. The ball is swinging in a circle, and the pole is rotating freely, so that the part of the pole where the string is attached is always facing the ball. Now you stop the pole rotating, so the string starts wrapping around the pole. What happens to the speed of the ball? (ignore effects due to gravity, assume the ball is a point mass)

A1: It doesn't change

A2: It's unclear, there's an argument for both speeding up and staying the same

Arguments for A1

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Question: Does the energy of the system change?

A1: No

A2: Probably not, it's not entirely clear

Arguments for A2

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Question: Is there an argument that it speeds up based on approximate conservation of angular momentum?

A1:

A2: Yes

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Question: Meta-debate: Given the questions and answers in this round, which is the better answer to the question?

A1: It doesn't change

A2: Draw

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Question: Is there an argument that the speed stays constant based on approximate conservation of energy?

A1:

A2: Yes

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Question: Do these arguments use similar levels of approximation?

A1:

A2: Yes