Beth:H Mark:D wrapping ball

Judge View | Tree View | List of Debates | Hide notes | Side: None | Phase: **Make Argument** Remaining: **10:00**

At root

0 Q (H): 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)

H: It stays the same

D: the speed increases

Notes

Q: Does the kinetic energy of the ball stay the same?

H: Yes

D: yes, approximately; it increases slightly.

3 Payment: H D None Recurse

Notes

Q: If the kinetic energy of the ball stays the same, does its speed stay the same?

H: Yes

D: Yes

4 Payment: H D None Recurse

Notes

Q: Is angular momentum approximately conserved?

H: No

D: yes

1 Payment: H D None Recurse

Notes

Q: If the angular momentum is conserved, then does the ball speed up?

H: Yes

D: yes

2 Payment: H D None Recurse

Notes

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7 To: 3 answer_dishonest

H: what do you mean by 'approximately'?

D: I mean such that the values are similar.

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8 To: 7 answer

H: Do you mean such that the answer to the question does not change?

D: No the speed of the ball increases.

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5 To: 1 question

H: What do you mean by angular momentum? Angular momentum about what centre?

D: I mean angular momentum around approximately the center of the pole

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6 To: 5 answer

H: what do you mean by 'approximately'?

D: I mean such that the answer to the question does not change.