Beth:D Mark:H 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: The speed stays the same

D: It's unclear

Notes

Q: Does the energy of the ball change?

H: No

D: There's an argument it doesn't, it's not entirely clear

1 Payment: H D None Recurse

Notes

Q: If the energy remains the same does the speed remain the same?

H: Yes

D: Yes, very likely

5 Payment: H D None Recurse

Notes

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

H: Yes, but momentum is not conserved

D: Yes

2 Payment: H D None Recurse

Notes

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

H: yes

D: Yes

3 Payment: H D None Recurse

Notes

Q: Do these arguments use similar levels of approximation?

H: no

D: Yes

4 Payment: H D None Recurse

Notes

---

7 To: 2 question

H: what do you mean by "approximate conservation of momentum"?

D: There is not significant momentum transferred out of the system

---

8 To: 3 question

H: What is this argument?

D: the same one you're thinking of