0 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)

It stays the same	the speed increases

3 Does the kinetic energy of the ball stay the same?

Yes	yes, approximately; it increases slightly.

9 Does the energy of the "pole + ball system" stay the same?

Yes	No

21 Does the pole do work on anything outside the system?

No	Yes

25 If the pole doesn't move, can it do work on anything?

No	Yes

29 For something to do work, does it have to exert a force while traveling some distance?

Yes	No

35 Is the airplane doing work?

The body of the airplane isn't, but the propellors etc are	Yes