

A train moves along the tracks at constant speed " $u$ ". A woman on the train throws a ball of mass " $m$ " straight ahead with a speed " $v$ " with respect to herself.

[A] What is the Kinetic energy gain of the ball as measured by a person on the train?

[B] What is the Kinetic energy gain of the ball as measured by a person standing by the railroad track?

[C] How much work is done by the ~~train~~ woman throwing the ball?

[D] ~~How~~ How much work is done by the train?