ADVANCED PHYSICS CLUB
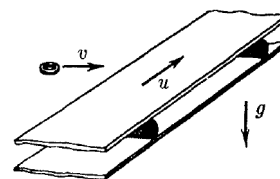
DECEMBER 11, 2022

Useful resources

The updates, homework assignments, and useful links for APC can be found on SchoolNova's web page:
`http://schoolnova.org/nova/classinfo?class_id=adv_phy_club&sem_id=ay2022`
The practical information about the club and contacts can be found on the same web page.
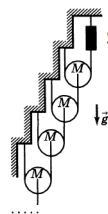
Today's meeting

Today we solved some problems on tension and friction. Three remaining problems are reassigned. There are no new problem sin this assignment. Instead, we will ask you to prepare a few physics video demonstrations from Youtube for our next class. During the meeting we will watch and discuss them together.
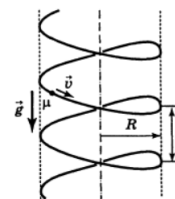
Reassigned Homework

1. A horizontal conveyor belt is moving with speed u. A puck flies on the belt with initial velocity v perpendicular to the belt. Find the maximal width of the belt at which the puck will still reach the opposite side of the belt if friction coefficient between the puck and the belt is μ.

*2. A half-infinite system is made out of massless ropes and similar pulleys each of mass M. Find what force is displayed by a spring scale S.

*3. A long wire is shaped as a coil of radius R and pitch h. The axis of the coil is vertical. There is a bead sliding down along the coil. Friction coefficient between the bead and the coil is μ. Find the steady speed of the bead.

Next meeting preparation

Please be ready to suggest one or two videos from Youtube demonstrating some cool physical effect or otherwise related to physics. We will watch them together and discuss.

For the next meeting

IMPORTANT: The next club's meeting is at 3:30pm, via Zoom, on Sunday, **December 18**. It will be the last club meeting in the year of 2022.