

USEFUL RESOURCES

The updates, homework assignments, and useful links for APC can be found on SchoolNova's web page:

https://schoolnova.org/classinfo?class_id=2252&sem_id=74

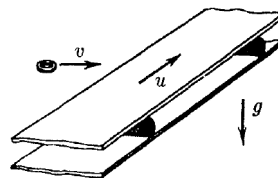
The practical information about the club and contacts can be found on the same web page.

TODAY'S MEETING

Today we continue with Newton's laws.

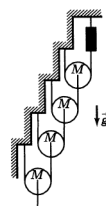
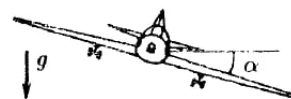
REASSIGNED HOMEWORK

1. A system of blocks lies on a horizontal frictionless table, as shown on the figure. The bottom right block is being pulled to the right with force F . Friction coefficient between blocks m_1 and m_2 is μ . Find the acceleration of every block in the system.
2. A horizontal conveyor belt is moving with speed u . A puck flies on the belt with initial velocity v perpendicular to the belt. Friction coefficient between the puck and the belt is μ . Find the maximal width of the belt such that the puck will still reach the opposite side of the belt.



NEW HOMEWORK

1. F=ma 2010 exam B, problems 9, 10 https://www.aapt.org/physicsteam/2010/upload/2010_Fma.pdf
2. The air drag force acting on rain droplets depends on the speed of the droplet, its' radius and density of the air. Using dimensional analysis reconstruct the expression for the drag force up to a dimensionless constant factor. Assuming this factor to be 1 estimate the speed that a droplet of radius 1 mm will have near the ground after falling from a great height. Density of air is 1.3 kg/m^3 .
3. An airplane makes a turn in the air. It moves horizontally along a circle of radius R with a constant speed v . Find the angle its' wings make with the horizon.
4. 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 .



FOR THE NEXT MEETING

IMPORTANT: The next club's meeting is at 2:40 pm, in-person, on Sunday, **December 7**.