

DISCUSSED PROBLEMS

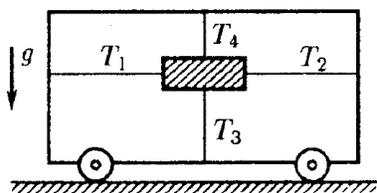
1. After being hit with a hockey stick a puck slides on the ice for 5 seconds, until it stops 20 meters away from the place it was hit. Mass of the puck is 100 g. Find the force of friction that was acting on the puck while it was sliding (assuming it was constant in time).

HOMEWORK PROBLEMS

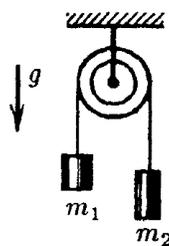
2. A block is attached to the cart using four ropes, as shown in the picture. Force of tension in the horizontal ropes is T_1 and T_2 , and in vertical ones - T_3 and T_4 , free fall acceleration is g . What is the acceleration of the cart?
3. Find an acceleration of blocks and tension forces in the system shown on the picture. Neglect masses of a pulley and ropes, also neglect friction.

ADDITIONAL PROBLEMS

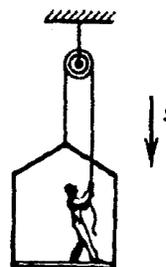
4. A painter works on a hanging platform. He urgently needs to go up and starts pulling the rope with such a force, that a force with which he presses on the platform becomes less by 400 Newtons. Mass of the painter is 72 kg and mass of the platform is 12 kg. Find the acceleration with which the platform and the painter move.
5. Two bodies of masses m_1 and m_2 are connected by a thread which withstands tension T (and bigger tension will tear it). Bodies are acted on by forces $F_1 = \alpha t$ and $F_2 = 2\alpha t$, where α is a constant coefficient and t is time. Find the time when the thread will be torn.
6. A system consists of N identical balls, connected by identical springs in a line and hanged vertically with a thread. Then the thread is cut. Find the accelerations of balls immediately after that.



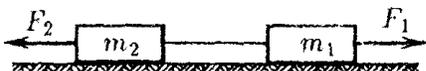
to problem 2



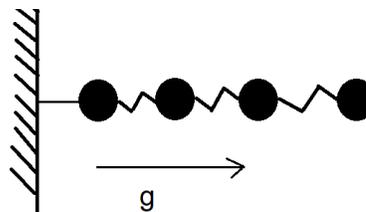
to problem 3



to problem 4



To problem 5



To problem 6