

Homework 5.

Think on the following problems:

1. A bullet of mass m hits a box with sand of total mass M placed on a horizontal surface. The bullet goes through the box. Initial velocity of the bullet is v , the velocity after the bullet goes out of the box is $v/2$. Find the heat energy produced by the bullet while it was going through the box.
2. An object, initially at rest, is been pulled by the rope in horizontal direction with a constant force F . In a time Δt the pulling stopped. What is the friction force that was applied to the object while it was moving if it stopped in a time $3\Delta t$ after it had started the motion?