

2015

Friction iPad Lab (Post Lab Assignment)

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Recommended Citation

Abbott, David, "Friction iPad Lab (Post Lab Assignment)" (2015). *Handouts*. Paper 1.
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Friction iPad Lab

Homework Sheet

Name: _____

A cardboard box containing books is given a quick shove along a horizontal floor. After it is released, the box slows to a stop at rate of 3.4 m/s^2 .

1. Find the coefficient of kinetic friction between the floor and cardboard. Show your work.

2. In the same hallway, there is a ramp that makes a 10° angle with the horizontal. A different load of books in the same cardboard box is given a quick shove **down** the ramp.
 - a. Find the acceleration of this box as it travels down the ramp.
 - b. Is this box speeding up or slowing down? Explain how you can tell from your calculations.

3. In this hallway there is a second, steeper ramp. When the box filled with some books is given a quick shove down this ramp, the box maintains constant speed after it is released. What is the slope of the steeper ramp?