# Homework 7

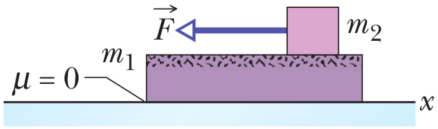
Due Wednesday, October 23 at 7pm

Finish reading Ch. 6 and start Ch. 7.

**Exercises**:

1. HRW Chap 6, P12.
2. HRW Chap 6, P16.
3. HRW Chap 6, P18.
4. HRW Chap 6, P57.

**Physical problem**:




5. In the picture at right, a slab of mass $m_1 = 40$ kg rests on a frictionless floor, and a block of mass $m_2 = 10$ kg rests on top of the slab. Between block and slab, the coefficient of static friction is 0.60, and the coefficient of kinetic friction is 0.40. A horizontal force $F$ of magnitude 100 N begins to pull directly on the block, as shown. In unit-vector notation, what are the resulting accelerations of (a) the block and (b) the slab? (c) Is there a critical value of the static friction where the system would have behaved differently? Find this critical value and describe how the system behaves if the coefficient of static friction is greater than this critical value.