Announcements

- Homework
  - Video HW 4 due tonight
  - New WebWorK assignment due Wednesday night
- Test a week from Wednesday
  - Will cover Ch. 3–5
  - Get a new notecard
- Grade reports are posted!
  - On WISE under the Dropbox section
  - If something seems amiss, please reach out
- Polling: `rembold-class.ddns.net`

Review Question

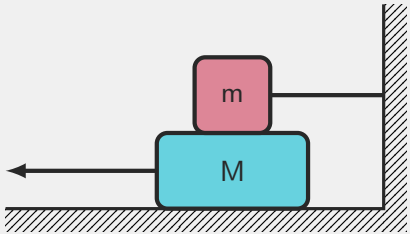
Consider the situation to the right, where the bottom block is being tugged to the left while the upper block is affixed to the wall with a rope. Both blocks are rough and experience friction. How many forces would you draw on the free body diagram for the lower block?

A) 4

B) 5

C) 6

D) 8



Solution: 6

Changing Momentum

- What to do when the momentum is changing?
- Two possible methods:
  - Magnitude is changing
  - Direction is changing

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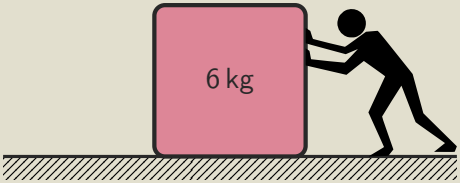
- With multiple objects, individual changes in momentum may differ, but assuming they are moving together, the change in velocity will be the same for all.

Simple Example: 1 Object

I start pushing a 6 kg crate on a level surface. The crate and the surface have a coefficient of kinetic friction of 0.67 and a coefficient of static friction of 0.75. I want to press with a constant force that will result in the crate moving at 1 m/s three seconds later. How hard do I push?



Solution: 41.396 N

Complex Example: 3 Objects

Suppose I am pushing three crates, one against the other, along the ground. We'll simplify things a bit here by removing friction. If I'm applying a constant force of 100 N, what is the force the middle box exerts on the leftmost box?