Physics 185F2013 Lecture Four

October 15, 2013

Dr. Jones[1]

[1]Department of Physics
Drexel University

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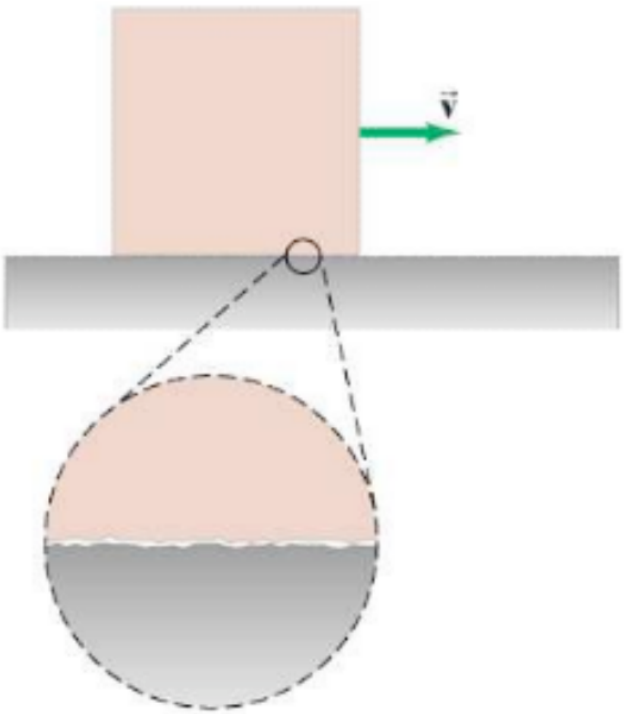
- Centripetal motion
- Non-point-like objects

Friction



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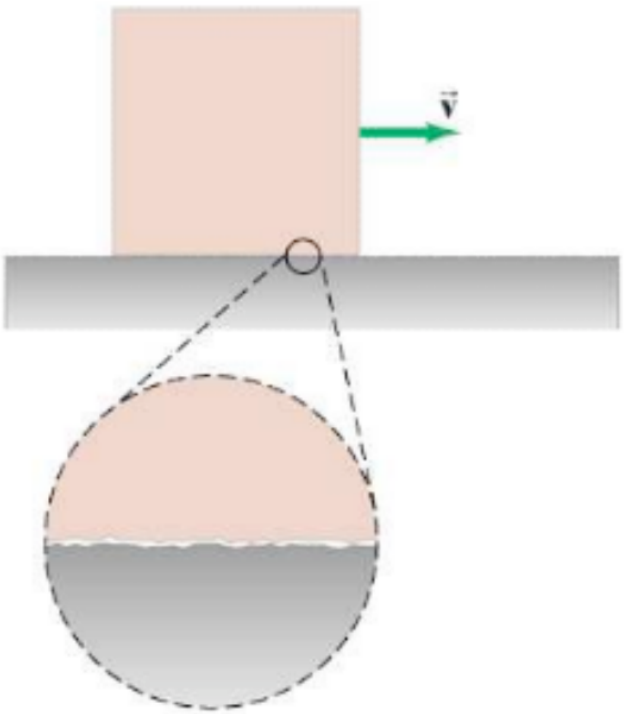

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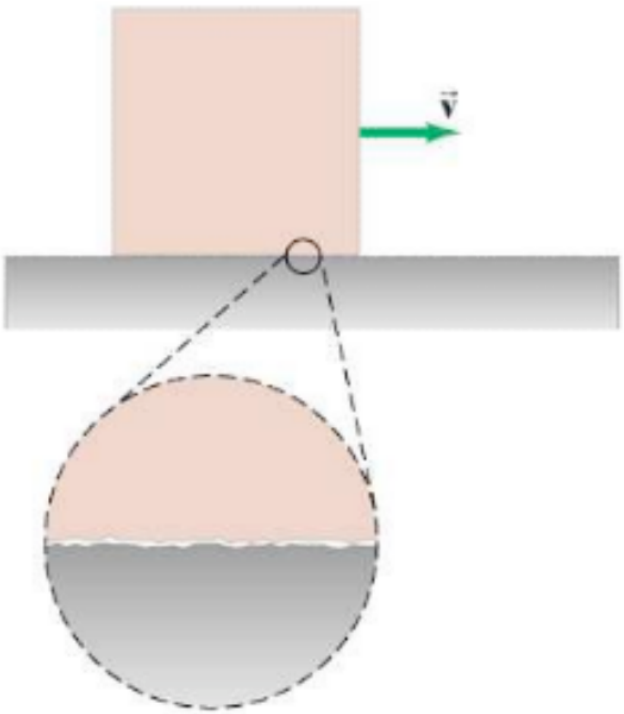

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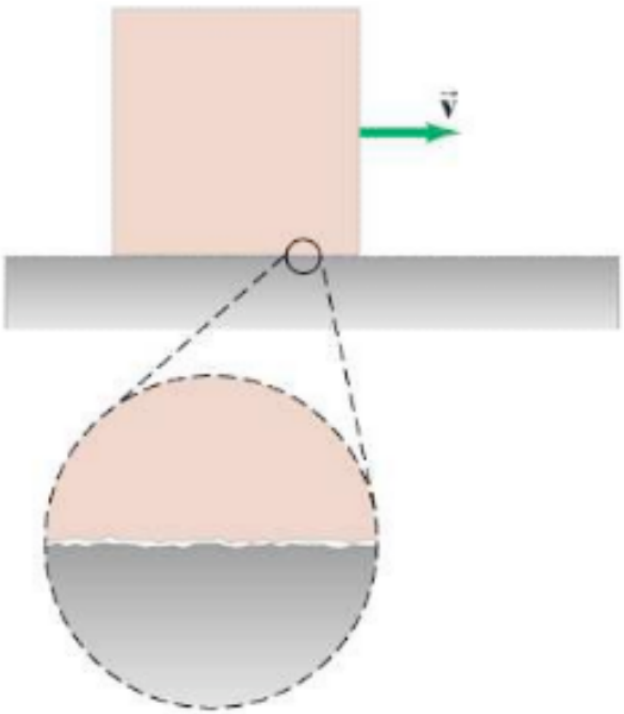

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Now imagine pushing that book along the sandpaper while your neighbor stood on top of it.

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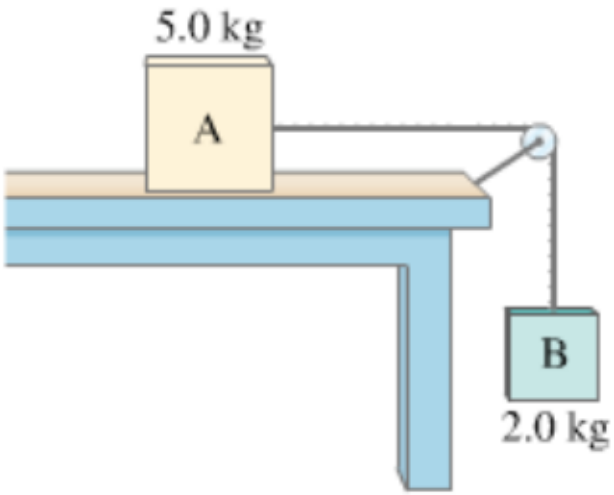
Kinetic friction is not as strong as static friction. When the objects are in relative motion, there is less time for the molecules to form bonds that must be overcome with force.

$$f_k = \mu_k F_n$$

Think about trying to push a heavy object across a floor, and how much easier it is to move it once it is in motion than to actually get it in motion from rest.

Revisiting a problem, now with friction



Find the coefficient of friction needed to keep this system in equilibrium.

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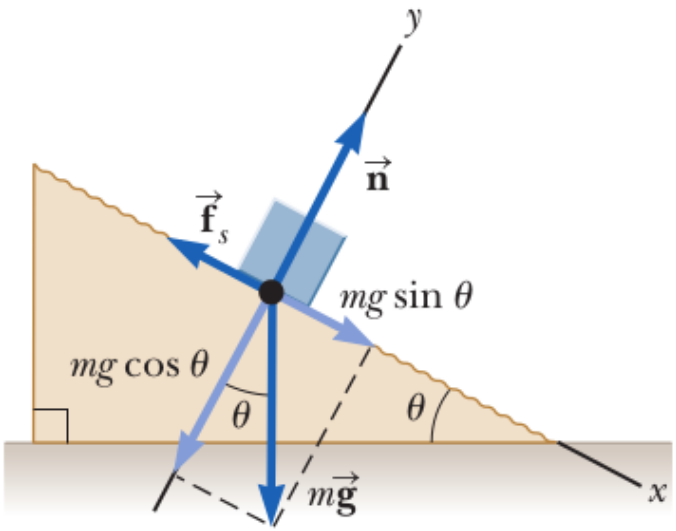

Find the coefficient of friction needed to keep this system in equilibrium if the block has a mass of 2.8 kg.