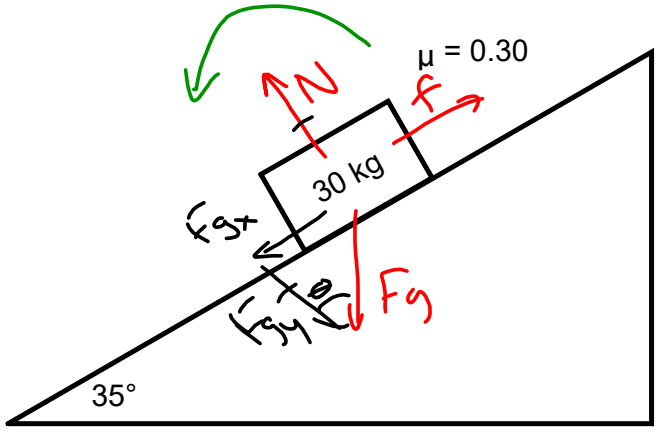
Questions?

Quiz



$\Sigma F = F_{gx} - f = ma$

$mg\sin\theta - \mu_k mg\cos\theta = ma$

$a = g(\sin\theta - \mu\cos\theta)$

$= 9.8(\sin 35^\circ - 0.30\cos 35^\circ)$

$= 3.2\ m/s^2$ downhill

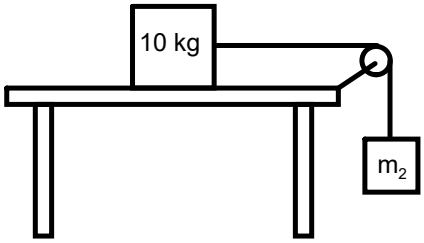
1. Draw the diagram and label the real forces.
2. Determine the acceleration of the object.
3. What size force (in addition to the ones in questions 1 and 2) would be required to make the object move up the hill at a constant speed?

Friction flips, $\Sigma F = \ddot{\smile} = F - (F_{gx} - f)$

$F = F_{gx} + f$

$= mg(\sin 35^\circ + 0.30\cos 35^\circ)$

$= 241\ N$



If there is a static coefficient of friction, μ_s=0.40 and a kinetic coefficient, μ_k=0.25 between the 10 kg mass and the table:

Determine the minimum mass, m_2, needed to get the system started. Once moving, determine the acceleration of the system, the tension in the rope, and the speed after 1.5 s.

Homework:
Read pp. 478-489
Questions 26-28 p 489

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Test on Monday: Vector addition, inclines, pulleys and FBDs