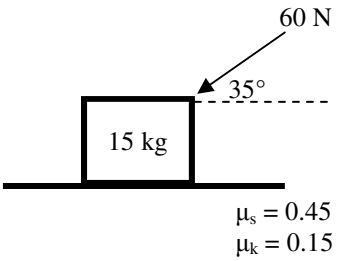
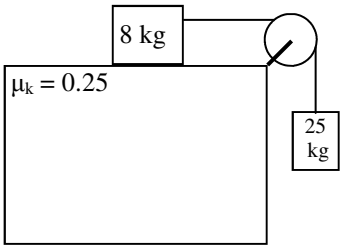
PreAP Physics: Due 10/20

Fight with these. If you keep the x and y directions straight, you have the skills to solve all of these. Don't outthink yourself!

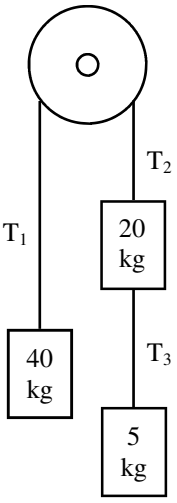
1. For the object at the right will the object move? If so, find its acceleration. If not, how much force is necessary to move it?



2. For the object at the right. Find the tension in the rope and the acceleration.



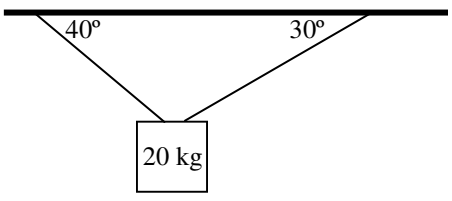
3. Find T_1, T_2, and T_3 and the acceleration of the system. *(Hint: it's just like the one we did in class, except it has one more part of the system, so you'll have to do one more substitution.)*



4. A car going 35 m/s stops in 120 m.
   A) Find the acceleration of the car.

   B) If the car has a mass of 550 kg, find the force of the car's brakes while stopping.

5. Find the tension in the two ropes holding up the object.



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6. An 50 kg child stands on a bathroom scale. The scale measure weight, what does it read?

7. The student then takes the scale into an elevator.
   A) While the elevator is stopped, what does the scale read?

   B) While the elevator moves between floors at a constant speed, what does the scale read?

   C) If the elevator moves up at 3.5 m/s^2, what does the scale read?

   D) If the elevator moves down at 4 m/s^2, what does the scale read?