A-Day: due Fri., 10/26 (Assigned 10/24)
B-Day: due Mon., 10/29 (Assigned 10/25)

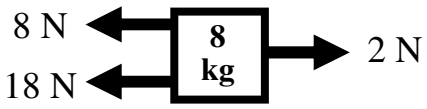
2007 Forces 2

Variable	Units	Name	Notes
F	N	Force	Is a vector
F_w	N	Force of weight	
m	kg	mass	

Fnet = ΣF = ma
ΣF = F1 + F2 + F3...
F_w = mg (can use g = 10)

1. Which of Newton's Three Laws applies? (*Hint, hint: there is a study help for this.*)
   A. ___ I throw a ball on the ground and it comes back up.
   B. ___ A 4 newton force is applied to three objects, the one with the most mass accelerates slowest.
   C. ___ I push on a car, how much acceleration will it have?
   D. ___ At the end of the 100-meter dash the runners take another 10 or 20 meters to stop.
   E. ___ When you are on a roller coaster your stomach feels strange at the top of the track.
2. Which is harder to stop; a 20 kg object or a 40 kg object?
3. Why?
4. For the 8 kg mass
   A. Find the net force.

   B. Find its acceleration.

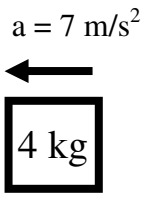


5. For the 4 kg mass
   A) Is its acceleration positive or negative?

   B) Find its net force.

   C) Does it have balanced or unbalanced forces?
   D) Is it at rest?
   E) In what way could it be moving to the right?

   F) In what way could it be moving to the left?



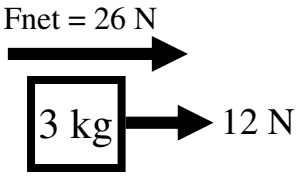
6. If an object is at equilibrium
   A) F_{net} =
   B) a =
   C) Δv =
   D) v =
7. What are the units for
   A) mass
   B) weight
   C) acceleration
   D) velocity
   E) force
8. A 25 kg mass is accelerating 2 m/s^2 to the left.
   A) 25 kg is the object's:
   B) 2 m/s^2 is the object's:
   C) What is the weight of the object?
9. A 350 N object feels 5 m/s^2 to the right.
   A) 350 N is the object's:
   B) 5 m/s^2 is the object's
   C) At the right, find the net force on the object.

More on Back

10. In the expression Fnet = ΣF = ma
    A) What does ΣF mean?

    B) Write 3 equations from the above expression.

11. On the 3 kg object,
    A) Are all forces shown?
    B) Find the other force.



12. If Vi = -9 m/s and Vf = 0 m/s
    A) Which direction is the net force?

    B) If the above velocity change in 2.5 seconds, find the acceleration of the object.

13. Give one case where an object have a net force but have v = 0 m/s?

14. Find the weight for a 45 N object.

15. Find the weight for a 60 kg object.

16. A rock is attached to a rope. If you spin it around above your head,
    A) In which direction is the net force?
    B) If you let go of the rope, what will be the path of the rock?

17. If you were in a wreck in your car, what would happen if you were not wearing a seat belt?

18. If I push on an object with 400 N of force
    A) how much force do I feel from the object?

    B) If there is no friction between my feet and the ground, what happens to me?