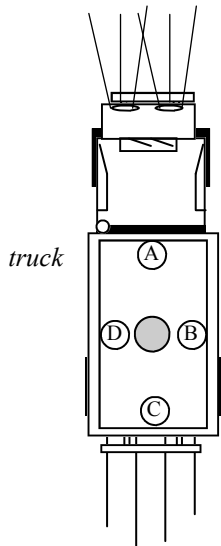
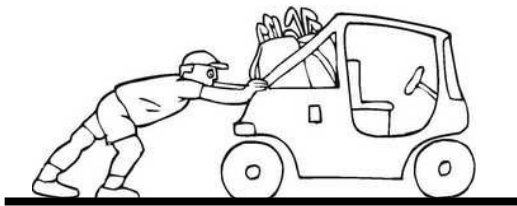


2008 Forces 2



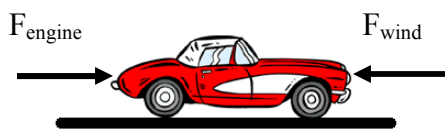
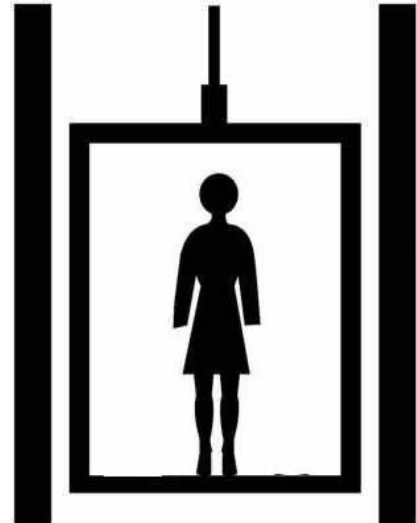
- The diagram at the left shows a truck moving at constant speed down the highway. In the bed of the truck there is a grey ball that is free to move.
 - ___ If the truck accelerates forward, where will the ball end up?
 - ___ If the truck turns to the right, where will the ball end up?
 - ___ If the truck stops, where will the ball end up?
 - ___ If the truck turns to the left, where will it end up?
 - Why?

- A very tiny (and light) elephant is being suspended in the air by balloons. Identify the forces on the elephant.
 - Since the balloons are TIED to the elephant, what force are they?
 - What force is pulling down on the elephant?



- Draw and label the forces acting on the golf cart (not the guy).
 - If the cart is 220 kg, what is the cart's weight?

- Draw and label the forces acting on the woman in the elevator.
 - Since the elevator is being help up by a cable, draw and label the force of the cable.
 - If the elevator is 1,200 kg and the woman is...well...50 kg (sorry to have to tell), what is the total weight of the elevator and woman?
 - If the elevator is stopped, how much force is exerted by the cable to keep the elevator stationary?



- If an object has balanced forces acting on it...
 - What is its net force?
 - Is it moving or at rest?
 - What is its acceleration?
- What kind of force is wind on your car?
 - Draw and label any other forces acting on the car.
 - If $F_{wind} > F_{engine}$, is acceleration + or -?
 - If $F_{wind} = F_{engine}$ the car has its c _____ c _____ on.
 - What is the speed of the object if $F_{wind} = F_{engine}$?
 - If $F_{wind} = F_{engine}$, then the object is at e _____.

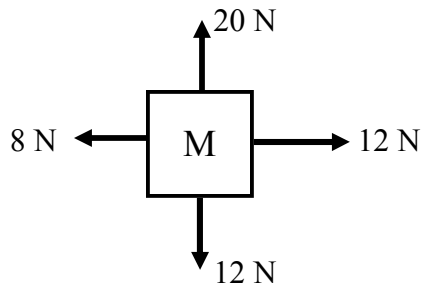
Forces 2—p2

7. If an object is at equilibrium

- A) $F_{\text{net}} =$ B) $a =$ C) $\Delta v =$ D) $v =$

8. What are the units for

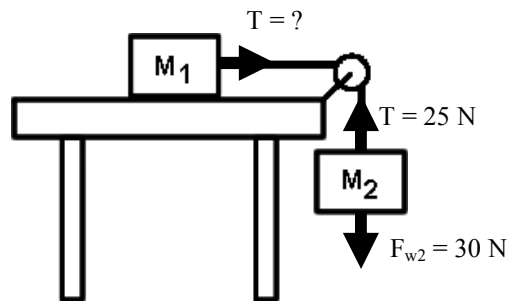
- A) mass B) weight C) acceleration D) velocity E) force



Again, ΣF_x means add up all of the x-direction forces.
OR it means find $F_{x_{\text{total}}}$.

9. The mass at the right is on a table and you are looking down on it.

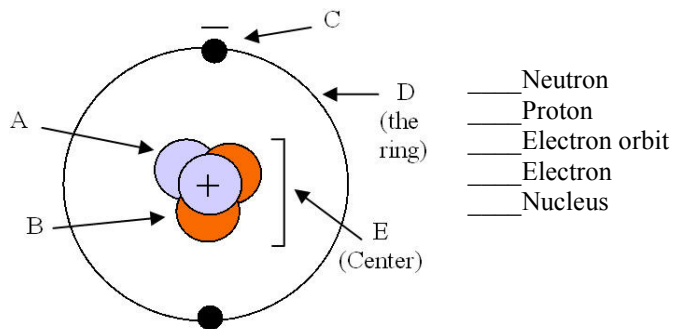
- A. $\Sigma F_x =$
B. $\Sigma F_y =$
C. Using total x and y above, find the magnitude and direction of the net force acting on the mass.



10. The two objects at the right are connected with a rope.

- A. What is the tension pulling M_1 ?
B. If the weight of mass 2 is 30 N, what is mass 2's mass?

11. Identify the parts of the atom below.



12. Proton, Neutron, or Electron?

- Attracts an electron
 Will repel a proton
 Doesn't attract anything
 Found in the nucleus
 Not in the nucleus
 Held together with the strong nuclear force.