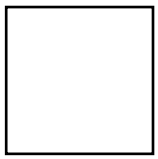
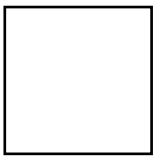
Newton's Laws Notes

- **Force**
  - Definition: _____
    _____
  - Vector or Scalar
  - Unit: _____
  - Two Types
    - Contact Forces
      - Examples: _____ , _____ , _____ ,
    - Long Range Forces
      - Examples: _____ , _____ , _____ ,
- Free Body Diagrams (FBD)

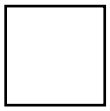


Horizontal

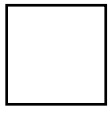


Vertical

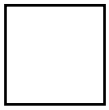
- Draw and label a FBD for an object on the floor with no applied force.



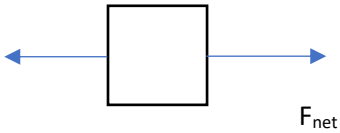
- Draw and label a FBD for an object falling with air resistance.



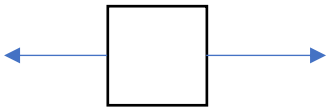
- Draw and label a FBD for an object on a frictionless table being pulled to the left with 40 N and to the right at 60 N.



- Net Force
  - Definition: _____



F_{net} = _____



F_{net} = _____

  - Result 1 : _____
  - Result 2 : _____
- Equilibrium
  - The state of an object when there is no net force acting on it. F_{net}= 0
  - An object in equilibrium will be at _____ or move at a _____.
- Newton's 1st Law
  - Law states: _____
    _____
  - Also called the _____
- Inertia
  - Definition: _____
  - What causes it? _____
- Newton's 2nd Law
  - Law states: any net force applied to an object will cause the object to accelerate in the direction of the force.
  - Equation: _____
- Newton's 2nd Law Sample
  - The net external force on a car is 14000 N south. If the car has a mass 2200 kg, what is the acceleration of the car?
- Weight
  - Definition: _____
  - Equation: _____
- Newton's Third Law
  - Definition: _____
    _____