7TH GRADE Week 27 Notes

Forces and Effects

- Forces can affect motion in several ways:
- They can make objects start moving
- They can make objects move faster
- They can make objects move slower
- They can make objects stop moving
- They can make objects change direction
- They can make objects change position

Motion: Describing Position

C-notes

Position is the location of an object or “place”
Motion is the change in position
To describe position you need to start with:
Reference point- a location that you can compare to other locations
Then you have to give:
Direction- left, right,
Distance- how far or near to that reference point

Motion: Describing Motion

C-notes

How to describe motion…

- Direction: up, down, left, right
- Compare it to something that is NOT moving
- How fast or slow…
- Changes in speed or direction

Relative Motion

C-notes

- All motion is “relative”…it depends on what you are comparing it to OR where you are watching from…

Relative Motion

C-notes

- Example:
- Sitting at your desk, how fast are you moving?

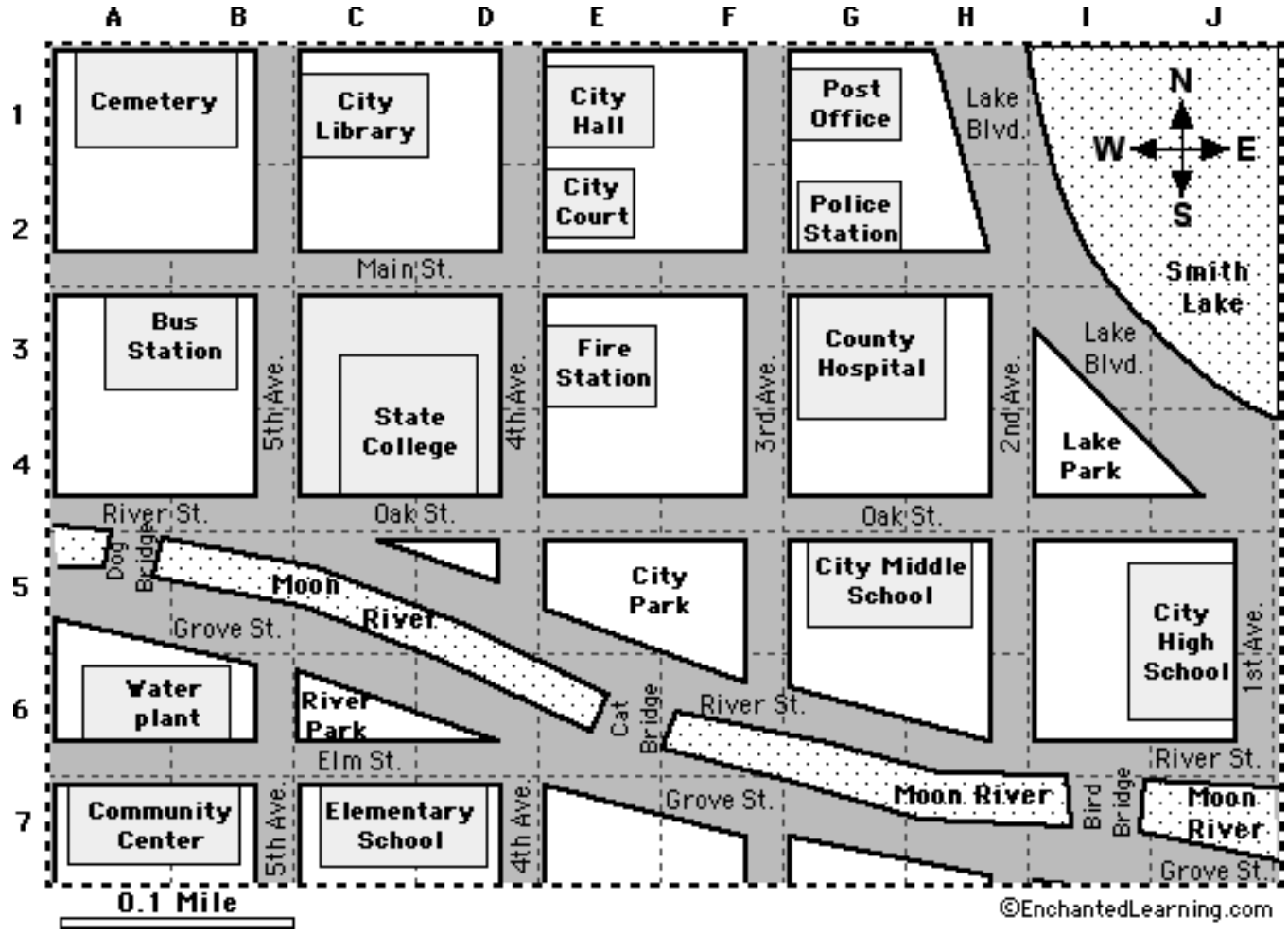
1. **Relative to the ground: Zero. You're not moving relative to the frame of reference of the ground.**
2. **Relative to the sun: You are spinning along with the Earth**

Relative Motion

C-notes

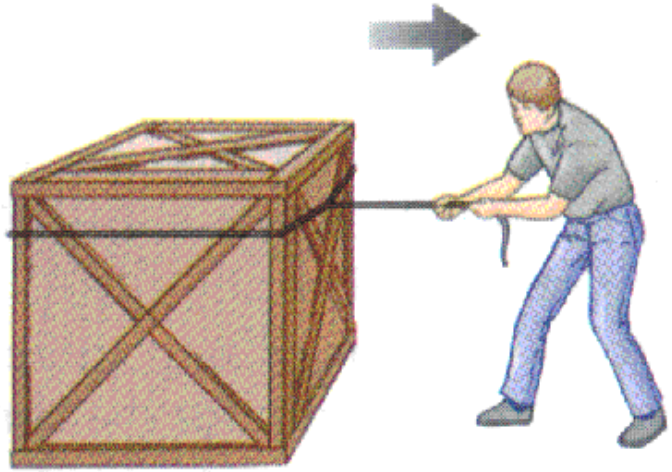
Example:

- Traveling on a airplane…
- Sitting in the plane- you are not moving compared to the seat or the floor of plane
- Someone looking at the plane from the ground…you are moving fast away compared to the ground

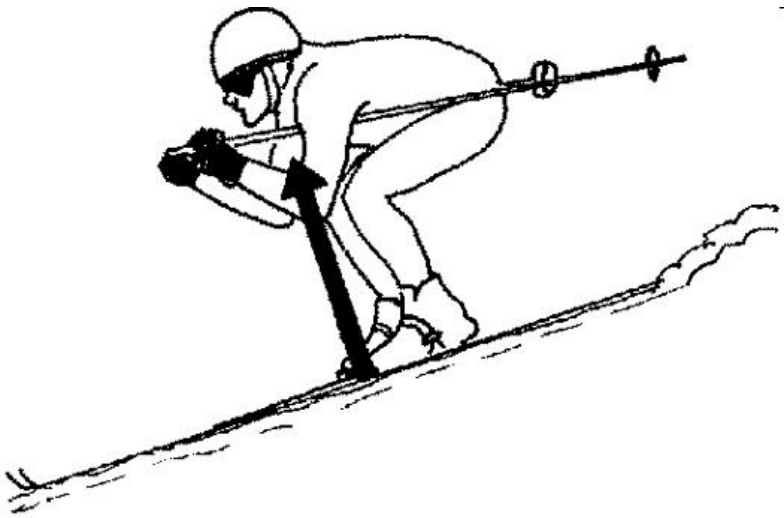


1. Describe the location of the fire station. Remember to use a reference point, distance and direction
2. Describe the location of the City Middle School. Remember to use a reference point, distance and direction

Warm Up 3.8.13



What forces are acting on the image above?



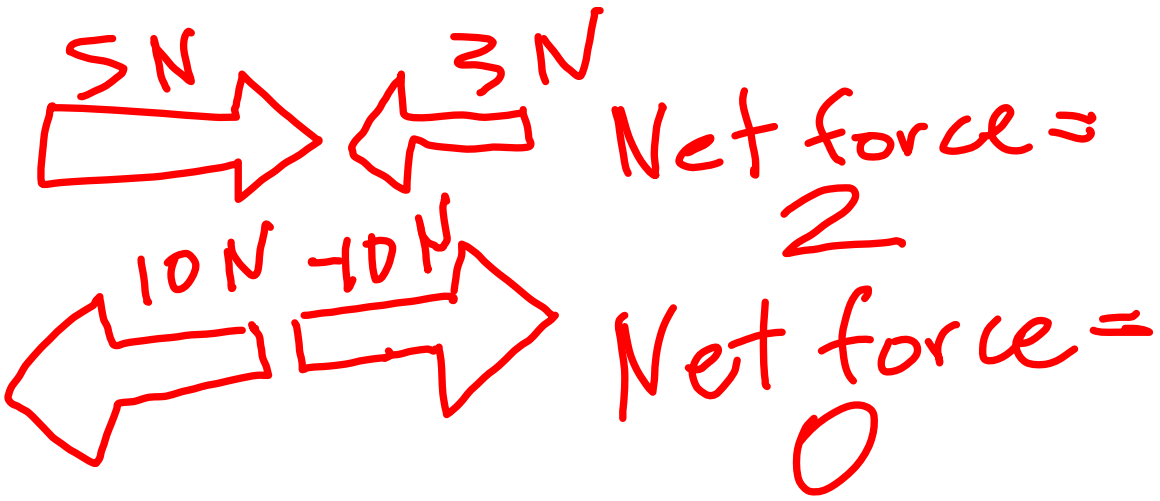
What forces are acting on the image above?

Net forces

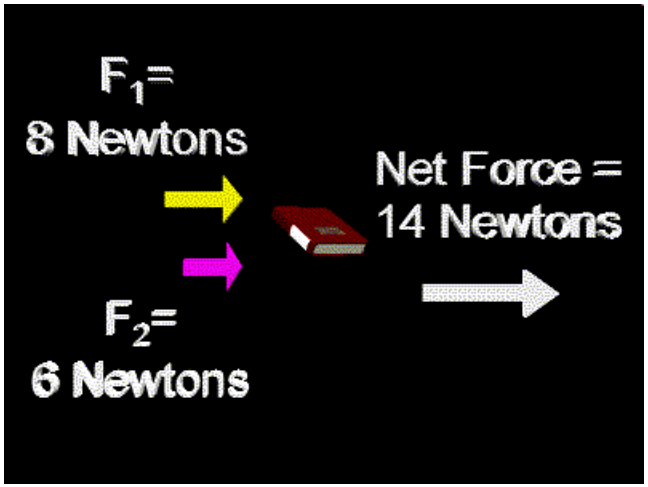
C-notes

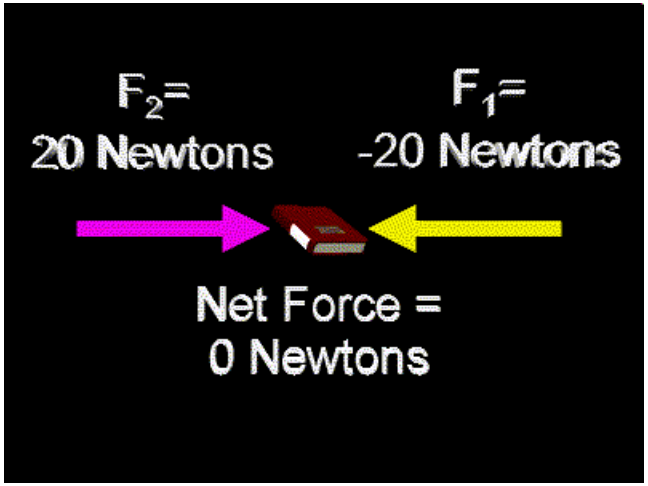
Net Force is the total amount of force acting on an object

The force is measured in NEWTONS (N)



The forces on the person are balanced.



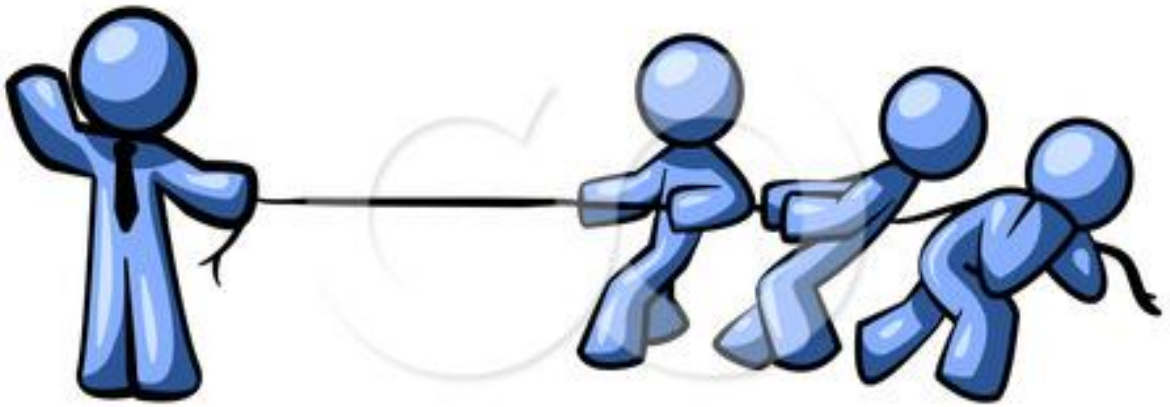


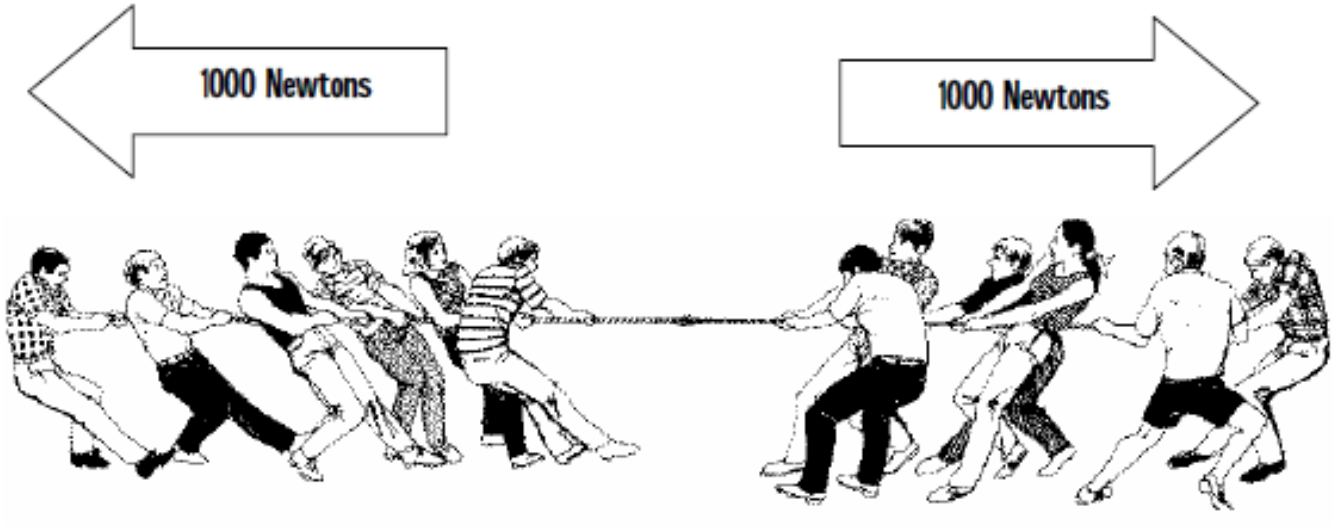
Name Hour

Balanced or Unbalanced?

Look at the diagram below and answer in detail:

1. **What forces are acting?**
2. **Label arrows with the forces**
3. **Are the forces balanced or unbalanced? Give a reason for your answer**





1. The forces shown above are PUSHING / PULLING forces.
2. The forces shown above are WORKING TOGETHER / OPPOSITE FORCES.
3. The forces are EQUAL / NOT EQUAL.
4. The forces DO / DO NOT balance each other.
5. The resultant force is 1000 N TO THE RIGHT / 1000 N TO THE LEFT / ZERO.
6. There IS / IS NO motion.

What is up with Gravity?

C-notes

1- It is a non-contact force
2- It is a force of attraction
Between 2 (or more) objects
3- It depends on MASS.
The more mass the more attraction

What is up with Gravity?

C-notes

4- **Weight is a measurement of the FORCE of gravity**

5-WEIGHT is NOT mass

6- For example, your weight on Jupiter is different than on Earth because Jupiter has more mass than the Earth….