

Physics Forces Quiz Review

Information to know:

- 3.1 Define, discuss, and distinguish between Newton Laws terms: force, net force, mass, equilibrium, weight, acceleration, friction, tension, normal force, & inertia.
- 3.2 State and apply Newton's First Law of motion.
- 3.3 Label the forces on acting on an object in a free body diagram if given a physical description of the situation
- 3.4 Conceptually describe Newton's Second Law.
- 3.5 Solve numerical/relationship problems involving different forces, mass, and acceleration of objects with motion in one plane. (Know $F=ma$ and how to solve problems with that information)

Practice Questions:

1. Describe the difference between mass and weight.
2. When is net force equal to zero?
3. What is inertia? What types of objects have the most inertia?
4. What is Newton's first law? Give an example of this!
5. Draw a free body diagram of
 - a. An apple falling from a tree:
 - b. An apple sitting on a table:
 - c. An apple that has been tossed and is mid flight:
 - d. An apple sitting on a slanted ramp:
6. What is the formula in Newton's Second Law?
7. What is the relationship between mass and force? What is the relationship between acceleration and force? What is the relationship between mass and acceleration?
8. If a small force is used to push an object, will it have a [large or small] amount of acceleration.
9. An object with a mass of 5 kg was pushed so that it is accelerating at a rate of 3 m/s^2 . What was the force that pushed it?
10. If two objects of the same amount of mass are accelerated by different forces. One mass is pushed with ten times the force of the other object. How do their accelerations compare?
11. What is the overall net force on an object that is being pushed up with 10 N, pushed to the right with a force of 6 N, pushed to the left with a force of 2 N and pushed downward with a force of 12 N? If this object has a mass of 5 kg, what is the overall acceleration?