

Physics Worksheet: Newton's 3rd Law

**Multiple Choice**

Choose the best answer to each question. Write the letter for that answer to the left of the question number.

1. Whenever an object exerts a force on another object, the second object exerts a force of the same magnitude, but in the opposite direction to that of the first object.
  - a) Always true
  - b) Sometimes true
  - c) Always false
2. A high school student hits a nail with a hammer. During the collision, there is a force
  - a) on the hammer but not on the nail.
  - b) on the nail but not on the hammer.
  - c) on the nail and also on the hammer.
3. A woman weighing 500 N sits on the floor. She exerts a force on the floor of
  - a) 1000 N.
  - b) 500 N.

4. An unbalanced force acts on an object. The object's acceleration is in the same direction as the force.

5. An automobile with a mass of 1000 kilograms accelerates when the net force on the car is 4000 newtons, what is the car's acceleration?

6. Calculate the acceleration of a 2000-kg, single-engine airplane just before takeoff when the thrust of its engine is 500 N.

7. Calculate the acceleration of a 300,000 kg jumbo jet just before takeoff when the thrust for each of its four engines is 30,000N.