Name:_____ Date:_____ Class:_____

Physical Science: Unit 5- Motion
Newton's Laws of Motion Review

Newton's First Law also called the **Law of Inertia**
An object at rest will remain at rest unless acted on by an unbalanced force. An object in motion continues in motion with the **same speed** and in the **same direction** unless acted on by an unbalanced force.

Inertia is the tendency of an object to stay the same. A moving object wants to continue moving and an object at rest wants to remain at rest.

Newton's Second Law
Acceleration is produced when a force acts on a mass. The greater the mass of the object the greater the amount of force necessary to accelerate the object.

Equation: $F = ma$
F – force in Newtons (N)
m- mass in kilograms (kg)
a- acceleration in meters per second squared (m/s^2)

Newton's Third Law
For every action there is an equal and opposite reaction. The force is equal in magnitude but opposite in direction.

Identify which of Newton's Laws is demonstrated in each of the following examples and then explain why the example demonstrates that law.

1. FIRST SECOND THIRD A magician pulls a tablecloth out from under dishes and glasses on a table without disturbing them.
    a. Explain.

2. FIRST SECOND THIRD A person's body is thrown outward as a car round a curve on a highway.
    a. Explain.

3. FIRST SECOND THIRD Rockets are launched into space using jet propulsion where exhaust accelerates out from the rocket and the rocket accelerates in an opposite direction.
    a. Explain.

4. FIRST SECOND THIRD A picture is hanging on a wall and does not move.
    a. Explain.

5. FIRST SECOND THIRD A person not wearing a seatbelt flies through a car window when someone slams on the brakes.
    a. Explain.