

# What Are Newton's Laws?

Lesson 4 Quiz

**1** Which of the following is the **best** way of stating Newton's first law of motion?

- (A)** Objects in space move randomly and unpredictably because no forces act on them.
- (B)** Once an object at rest begins to move, it will soon begin to slow down, turn, or stop.
- (C)** Balanced forces cause an object to move, and unbalanced forces cause it to stop moving.
- (D)** Objects at rest don't move unless an unbalanced force acts on them, and objects in motion don't slow down, speed up, stop, or turn unless a force makes them do so.

**2** How does inertia function in each of the illustrations below?




- (A)** Inertia causes the car and the object in orbit to accelerate.
- (B)** Inertia causes the car to stop, and it causes the object to turn back toward the Earth.
- (C)** Inertia causes the man's body to move forward when he puts on the brake and it causes the object to keep moving in orbit around Earth.
- (D)** Inertia causes the seat belt to tighten around the man's body, and it maintains a constant pull on the object in orbit around Earth.

**3** Why would an object in a spacecraft float in the air rather than fall to the floor?

- (A)** There is no gravity in space.
- (B)** None of Newton's laws of motion applies to space.
- (C)** The force of gravity in space is less than it is on Earth.
- (D)** Inertia allows the object to overcome the force of gravity.

**4** According to Newton's second law of motion, what two factors determine an object's acceleration?

- (A)** the speed of the object and the power of inertia on the object
- (B)** the mass of the object and the amount of force applied to the object
- (C)** the shape of the object and the material from which the object is made
- (D)** the strength of gravity as it is applied to the object and the weight of the object

**5** According to Newton's third law of motion, what happens whenever one object applies a force to a second object?

- (A)** The second object accelerates.
- (B)** The first object changes the mass of the second object.
- (C)** The second object applies an equal, opposite force to the first object.
- (D)** The first object and the second object begin to move, or they change the way they are moving.