

1) If you're in a car that gets hit from behind, you can get whiplash (neck injury) if you're head is not against a headrest. This is best explained via:

- A) your whole body undergoes a sudden acceleration.
- B) there is an action-reaction pair of forces between your neck and head.
- C) inertia -- the back of your seat pushes your back forward but your head tends to stay where it was.
- D) inertia – you resist the motion of the car.
- E) none of these

2) When you push a ball on grass, starting it rolling, it keeps rolling for a while even after you've let go. The concept that best explains why is

- A) inertia
- B) gravity
- C) acceleration
- D) friction

3) If no external forces are acting on a moving object it will

- A) move slower and slower until it finally stops.
- B) continue moving at the same velocity.
- C) continue moving at the same speed.

4) Whirl a rock at the end of a string and it follows a circular path. If the string breaks, the tendency of the rock is to

- A) increase its speed
- B) continue to follow a circular path.
- C) follow a straight-line path.
- D) revolve in a smaller circle

5) As you're sitting in your chair, your weight acts as a downward force on the chair. Why then does the chair not sink into the ground?

- A) because of its weight
- B) because it feels an upward directed support force from the ground it is pushing down on
- C) because of inertia
- D) because of momentum conservation.

