

The Physics of Car Crashes



NAME:

DATE:

QUIZ

Choose the best option to answer the following multiple choice questions.

1. Which of the following is not an example of acceleration?
 - a. Turning right onto a different street
 - b. Pressing the gas pedal in your car
 - c. Pressing the brake pedal in your car
 - d. Maintaining speed at 65 mph
 - e. Putting a car into reverse

2. Every action or force upon an object must have an equal and _____ reaction.
 - a. Measurable
 - b. Accurate
 - c. Correct
 - d. Opposite
 - e. Directionless

3. In a vacuum, you throw a baseball. It travels at the _____ forever due to _____.
 - a. Initial velocity, inertia
 - b. Gravitational velocity, inertia
 - c. Initial velocity, gravity
 - d. Initial acceleration, inertia
 - e. Initial acceleration, gravity

4. Objects in motion will _____ until acted upon by another force.
 - a. Stay in motion
 - b. Lose potential energy
 - c. Lose kinetic energy
 - d. Lose in both potential and kinetic energy
 - e. None of the above

5. According to Newton, force is equal to mass multiplied by _____.
 - a. Velocity
 - b. Acceleration
 - c. Speed
 - d. Momentum
 - e. Inertia

Match each physics term to its correct definition.

1. Acceleration	A. Continuous change in the position of a body relative to a reference point
2. Momentum	B. The ability of an object (or in some cases a non-object, such as a magnetic force field) to accomplish work.
3. Energy	C. The speed of an object in a particular direction.
4. Kinetic Energy	D. A measure of the gravitational force on an object. A pound is a unit of weight, whereas a kilogram is a unit of mass. Weight thus would change from planet to planet, whereas mass remains constant throughout the universe.
5. Potential Energy	E. The energy that an object possesses by virtue of its position.
6. Joule	F. Physical substance that occupies space, has mass, is composed of atoms (or in the case of subatomic particles, is part of an atom), and is convertible into energy.
7. Inertia	G. The energy that an object possesses by virtue of its motion.
8. Friction	H. A change in velocity over a given time period.
9. Mass	I. The product of mass multiplied by velocity.
10. Matter	J. The rate at which the position of an object changes over a given period of time.
11. Speed	K. The exertion of force over a given distance. Work is the product of force and distance, where force and distance are exerted in the same direction.
12. Weight	L. The tendency of an object in motion to remain in motion, and of an object at rest to remain at rest.
13. Work	M. The measure of work.
14. Velocity	N. A measure of inertia, indicating the resistance of an object to a change in its motion—including a change in velocity.
15. Motion	O. Any force that resists the motion of body in relation to another with which it is in contact.