

Physics

Projectiles, Form: A

Name: _____

Date: _____

Period: _____

Primary Peer Reviewer: _____

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Section 1. Multiple Choice

1. While going on vacation, a child leaves his ball on the floor of an airplane. When the plane accelerates forward, the ball rolls to the back of the plane. What happens when the plane stops?
 - (a) It is thrown harder against the back of the plane.
 - (b) It rolls to the front of the plane.
 - (c) The ball's inertia keeps it against the back of the plane.
 - (d) The ball is not affected by stopping.
 - (e) It stays in place.
2. A net external force of 50 Newtons acts on a 10-kilogram object. The object must be-
 - (a) accelerating
 - (b) moving at a constant speed
 - (c) at rest
 - (d) moving in the negative direction
 - (e) it is impossible to tell
3. Which of the following statements is correct?
 - (a) Mass and weight are the same thing, but measured in different units.
 - (b) When an object is falling freely, it is massless.
 - (c) If the mass of an object is doubled, its weight is tripled.
 - (d) The mass of an object is independent of the force of gravity acting on an object.
 - (e) Objects in space have weight but no mass.
4. Which of the following forces is most often responsible for causing objects to slow down?
 - (a) Gravity
 - (b) Friction
 - (c) The Normal Force
 - (d) Centripetal Force
 - (e) None of the above

5. A force of 26 N is needed to overcome a frictional force of 5 N to accelerate a 3 kg mass across a floor. What is the acceleration of the mass?
- (a) 4 m/s²
 - (b) 5 m/s²
 - (c) 7 m/s²
 - (d) 20 m/s²
 - (e) 60 m/s²
6. How much force is required to keep a space ship moving at constant velocity in deep space, very far from all stars and planets?
- (a) equal to the force required to stop it.
 - (b) equal to its weight.
 - (c) zero.
 - (d) dependent on how fast the ship is moving.
 - (e) dependent on the particular inertial reference frame to which the force is referenced.
7. Billy-Bob is standing in the middle of a circular, frozen lake of radius $r=10\text{m}$. The surface of the lake is perfectly frictionless. He has 3 meters of rope. What is the best way for him to reach the edge of the lake?
- (a) Propel himself by wiggling the rope back and forth, similar to the motion of a snake.
 - (b) Throw the rope opposite to the direction he wants to travel.
 - (c) Crawl along the surface of the lake.
 - (d) Walk carefully to the edge of the lake.
 - (e) Attempt to hook the rope around a tree on the shore, then use the rope to pull himself to the shore
8. A Large truck collides with a bicyclist. During the collision, which of the following forces is bigger?
- (a) The force the truck exerts on the bicyclist.
 - (b) The force the bicyclist exerts on the truck
 - (c) Both forces are equal.
 - (d) It is impossible to tell without knowing the velocities of the truck and the bicyclist.
 - (e) None of the above.

Answer Key for Exam A

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