

Review Questions on Newton's Laws**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- _____ 1. A cart is pushed to the right with a force of 15 N while being pulled to the left with a force of 20 N. The net force on the cart is
- a. 5 N to the left
 - b. 5 N to the right
 - c. 35 N to the left
 - d. 35 N to the right
- _____ 2. Push a cart along a track so twice as much force acts on it. If the acceleration remains the same, what is a reasonable explanation?
- a. The cart experiences a force that it didn't before
 - b. The track is not level
 - c. The mass of the cart doubled when the force doubled
 - d. Friction reversed direction
- _____ 3. When you step off a curb, Earth pulls you downward. The reaction to this force is
- a. a slight air resistance
 - b. you pulling Earth upward
 - c. nonexistent in this case
 - d. none of the above
- _____ 4. When a cannon is fired, the acceleration of the cannon and cannonball are different because the
- a. masses are different
 - b. ratio of force to mass are the same
 - c. forces do not occur at the same time
 - d. forces, although theoretically the same, in practice are not
- _____ 5. A man sits on a box. Which statement about the normal force acting on the box (due to the floor) is true?
- a. The normal force is equal to the weight of the box
 - b. The normal force is equal to the box's weight minus the man's weight
 - c. The normal force is less than the box's weight
 - d. The normal force is equal to the man's weight plus box's weight
- _____ 6. A 4000 kg vehicle collides with an 8000 kg vehicle. During the collision
- a. the 8000 kg vehicle experiences a large magnitude force and a smaller magnitude acceleration
 - b. the 2000 kg vehicle experiences a large magnitude force and a larger magnitude acceleration
 - c. they both experience the same magnitude force but the 2000 kg vehicle has a large acceleration
 - d. they both experience the same magnitude force and the same magnitude acceleration
- _____ 7. A 5 kg iron ball and a 10 kg iron ball are dropped. For negligible air resistance, the acceleration of the heavier ball will be
- a. less
 - b. the same
 - c. more
 - d. undetermined
- _____ 8. The force of gravity between two planets depends on their
- a. masses and distance apart
 - b. planetary atmosphere
 - c. rotational motions
 - d. relative masses

Name: _____

ID: A

- _____ 9. According to Newton, doubling the distance between two interacting objects
- a. divides by 2 the gravitational force between them
 - b. multiplies by 2 the gravitational force between them
 - c. divides by 4 the gravitational force between them
 - d. multiplies by 4 the gravitational force between them
- _____ 10. A very massive object A and a less massive object B move toward each other under the influence of gravitation. Which force, if either, is greater?
- a. both forces are the same
 - b. the force on A
 - c. the force on B
 - d. Cannot determine without knowing the masses
- _____ 11. A satellite weights 100 N on the surface of the Earth. What is its weight at a distance of one Earth's radius above the Earth?
- a. 200 N
 - b. 100 N
 - c. 50 N
 - d. 25 N
- _____ 12. Compared to the mass of an object on Earth, the mass of the same object on the moon is
- a. one sixth as much
 - b. the same
 - c. six times as much
 - d. zero
- _____ 13. A bag of groceries has a mass of 10 kilograms and a weight of
- a. about 1 N
 - b. bout 10 N
 - c. about 100 N
 - d. about 1000 N