

## Chapter Review Forces and Newton's Law

### Part A. Vocabulary Review

**Directions:** *In the space at the left, write the term from the list that correctly completes each statement.*

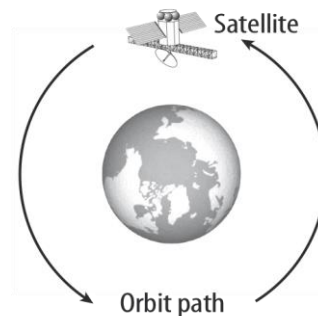
gravity	weight	distance	newtons	momentum
terminal velocity	Newton's second law of motion		net force	
centripetal force	Newton's third law of motion		centripetal acceleration	
air resistance	conservation of momentum	sliding friction	static friction	

- \_\_\_\_\_ 1. The phrase "to every action there is an equal and opposite reaction" is \_\_\_\_\_.
- \_\_\_\_\_ 2. The largest velocity reached by a falling object is its \_\_\_\_\_.
- \_\_\_\_\_ 3. An object at rest on the surface of the Earth is experiencing zero \_\_\_\_\_.
- \_\_\_\_\_ 4. When an object moves in a circle, \_\_\_\_\_ acts to accelerate the object toward the center of that circle.
- \_\_\_\_\_ 5. When a car travels around a curve in the road, \_\_\_\_\_ helps to keep the car traveling in a curved path.
- \_\_\_\_\_ 6. The force exerted by air on a moving object is called \_\_\_\_\_.
- \_\_\_\_\_ 7. A net force acting on an object causes the object to accelerate in the direction of the force; this is \_\_\_\_\_.
- \_\_\_\_\_ 8. A property of a moving object resulting from its mass and velocity is \_\_\_\_\_.
- \_\_\_\_\_ 9. According to the \_\_\_\_\_, when a bowling ball strikes the pins, the momentum lost by the bowling ball is equal to the momentum gained by the pins.
- \_\_\_\_\_ 10. \_\_\_\_\_ is the force that every object in the universe exerts on every other object.
- \_\_\_\_\_ 11. An object's \_\_\_\_\_ is the measure of the force of gravity on that object.
- \_\_\_\_\_ 12. The amount of gravitational force between two objects depends on their masses and the \_\_\_\_\_ between them.
- \_\_\_\_\_ 13. Weight is measured in units called \_\_\_\_\_, while mass is measured in units called grams and kilograms.
- \_\_\_\_\_ 14. Two surfaces that are not moving past each other have \_\_\_\_\_.
- \_\_\_\_\_ 15. \_\_\_\_\_ causes a box you are pushing across the floor to stop when you stop pushing.

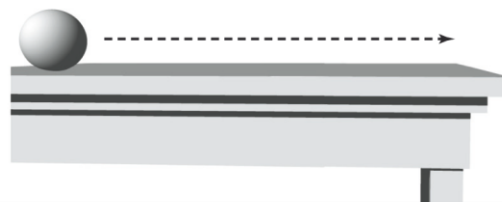
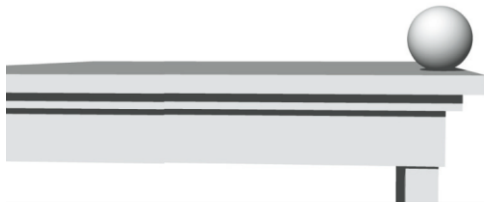
## Chapter Review, Forces and Newton's Law *CONTINUED*

### Part B. Concept Review

- In the diagram at the right, a satellite is shown orbiting Earth. Add three arrows to the diagram to indicate the effects of
  - inertia,
  - gravity,
  - the path you predict results from the effects of inertia and gravity.
 Label the arrows **a**, **b**, and **c**.



- Complete the diagrams below by indicating the path of the ball in each situation.



- The ball is placed on the edge of a table and allowed to fall to the floor.
  - The ball is rolled rapidly across the table and falls onto the floor.
- The balls in the figure above have the same mass. If the balls are dropped from the table at the same time, which ball will hit the floor first?

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- If a 2-kg ball is thrown through the air at 20 m/s, what is the momentum of the ball?
- Why would a flat sheet of paper and a wad of paper with the same mass not fall through the air at the same rate?

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- When is something weightless?

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- What are the three types of friction and how are they different?

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