Name _____ Date _____ Class _____

Content Practice A

LESSON 3

Newton's Second Law

Directions: *On each line, write the term from the word bank that correctly completes each sentence. Each term is used only once.*

acceleration	**center**	**centripetal force**	**direction**	**gravity**
inertia	**mass**	**newton**	**speed**	**straight**

1. An object's velocity can be changed by changing its _____, its _____, or both.

2. A change in velocity over time is called _____.

3. The increasing speed of a falling object is caused by _____.

4. One $kg \cdot m/s^2$ can also be expressed as 1 _____.

5. Newton's second law of motion describes acceleration as force divided by _____.

6. Because of _____, an object in circular motion has a tendency to move away in a(n) _____ line.

7. The force that pulls an object in circular motion and keeps it in circular motion is _____.

8. The direction of the force that pulls an object in circular motion is toward the _____ of the circle.

Name _____ Date _____ Class _____

Content Practice B

LESSON 3

Newton's Second Law

Directions: *This diagram represents two objects above Earth, the center of which is marked with a dot. Object 1 is a satellite orbiting Earth in the direction shown by the arrow. Object 2 is an object headed toward Earth. Use the diagram to respond to the statement.*

1. Add three arrows to the drawing—one showing the direction of the satellite's acceleration (label it line A), one showing the path the satellite would take if it suddenly became free of Earth's gravitation (label it line B), and a third showing the direction of object 2's acceleration (label it line C).

Directions: *On the line before each question or statement, write the letter of the correct answer.*

_____ **2.** If a force acts on a moving object in the same direction that the object is moving, what will happen to the object?
- **A.** It will stop.
- **B.** It will speed up.
- **C.** It will slow down.
- **D.** It will continue moving at the same speed.

_____ **3.** After a baseball leaves the pitcher's hand, what is the main force acting on it?
- **A.** gravity
- **B.** friction
- **C.** electric force
- **D.** centripetal force

_____ **4.** Newton's second law of motion states that force is equal to mass times
- **A.** weight.
- **B.** inertia.
- **C.** velocity.
- **D.** acceleration.