

SECTION
2

Study Guide

Newton's Second Law

Chapter

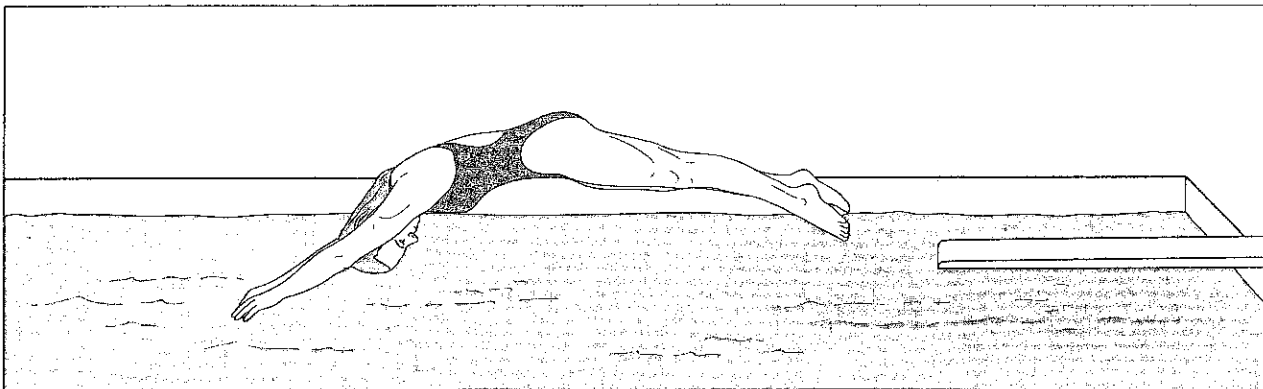
2

Directions: Select the term from the following list that matches each description. Some terms will not be used.

- | | | |
|-------------|---|----------------------------------|
| a. 16 N | e. $a = \frac{F}{m}$ | i. 600 N |
| b. -16 N | f. normal forces | j. Newton's second law of motion |
| c. gravity | g. air resistance | k. terminal velocity |
| d. $F = ma$ | h. $F = m\left(\frac{9.8 \text{ m}}{\text{s}^2}\right)$ | l. Newton's first law of motion |

- _____ 1. acts against the direction of motion and gets larger as an object moves faster
- _____ 2. Force is equal to mass times acceleration.
- _____ 3. An object acted upon by a net force will accelerate in the direction of that force.
- _____ 4. the gravitational force on any object near Earth's surface
- _____ 5. the outward forces exerted by a surface
- _____ 6. the speed an object reaches when the force of gravity is balanced by the force of air resistance
- _____ 7. What force must be applied to a 60-kg object to make it accelerate at 10 m/s²?

Directions: Study the illustration of the diver. Then identify each statement as **true** or **false**. If the statement is false, change the word(s) in *italics* to make it true.



- _____ 8. After the diver jumps forward from the diving board, the force of gravity will accelerate the diver *parallel* to the direction of motion.
- _____ 9. When the diver hits the water, the force of the water against her body can stop it about *five times faster* than the pull of gravity that accelerated it.
- _____ 10. If the diver doesn't have the correct form when she enters the water, the force of the water can *accelerate* her speed.
- _____ 11. *Air resistance* prevents the diver from moving in a straight line once she jumps from the platform.