

Chapter 13

Use with Section 2

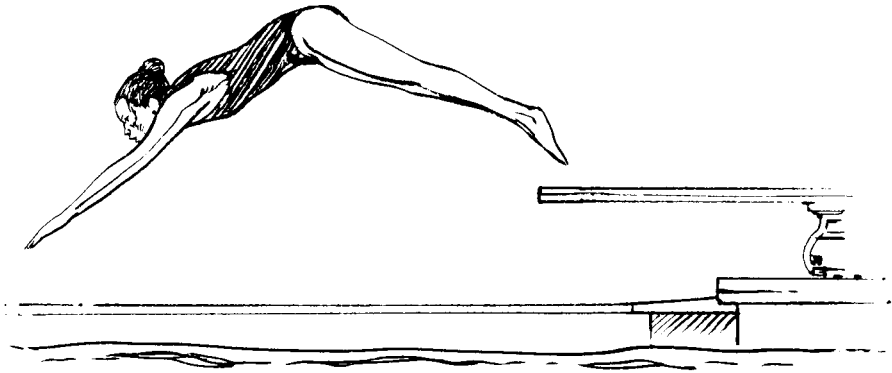
REINFORCEMENT

● Newton's Second Law

Select a term from the group shown below to match the definitions given.

- | | | |
|-------------|-------------------------|----------------------------------|
| a. 32 N | e. $a = F/m$ | i. -20 N |
| b. -32 N | f. normal forces | j. Newton's second law of motion |
| c. $p = mv$ | g. <i>The Principia</i> | k. terminal velocity |
| d. $F = ma$ | h. momentum | l. Newton's first law of motion |

- _____ 1. Publication in which Sir Isaac Newton described forces and how they act
- _____ 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. Momentum is equal to mass times velocity.
- _____ 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. The force necessary to stop an 80 kg bicyclist in 10 s if she is riding at 4 m/s



Study the illustration of the diver. Then indicate whether the following statements are 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 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. When the diver enters the water, the force of the water is *opposite* to the velocity of the diver.
- _____ 12. *Momentum* prevents the diver from moving in a straight line once she jumps from the platform.