

## SECTION REVIEW

1. Explain how the force due to gravity keeps a satellite in orbit.
2. Is there gravitational force between two students sitting in a classroom? If so, explain why you don't observe any effects of this force.
3. Earth has a mass of  $5.97 \times 10^{24}$  kg and a radius of  $6.38 \times 10^6$  m, while Saturn has a mass of  $5.68 \times 10^{26}$  kg and a radius of  $6.03 \times 10^7$  m. Find the weight of a 65.0 kg person at the following locations:
  - a. on the surface of Earth
  - b. 1000 km above the surface of Earth
  - c. on the surface of Saturn
  - d. 1000 km above the surface of Saturn
4. What is the magnitude of  $g$  at a height above Earth's surface where free-fall acceleration equals  $6.5 \text{ m/s}^2$ ?
5. **Critical Thinking** Suppose the value of  $G$  has just been discovered. Use the value of  $G$  and an approximate value for Earth's radius ( $6.38 \times 10^6 \text{ m}$ ) to find an approximation for Earth's mass.