

Assessment

Work and Energy**Section Quiz: Energy**

Write the letter of the correct answer in the space provided.

- _____ 1. Energy that is due to the motion of an object is
- kinetic energy.
 - potential energy.
 - gravitational potential energy.
 - elastic potential energy.
- _____ 2. Energy stored in the gravitational field of interacting bodies is
- kinetic energy.
 - nonmechanical energy.
 - gravitational potential energy.
 - elastic potential energy.
- _____ 3. Energy associated with a compressed or stretched object is
- kinetic energy.
 - potential energy.
 - gravitational potential energy.
 - elastic potential energy.
- _____ 4. How does the kinetic energy of an object change if the object's speed doubles?
- The kinetic energy decreases to half its original value.
 - The kinetic energy doubles.
 - The kinetic energy increases by a factor of 4.
 - The kinetic energy does not change.
- _____ 5. The work-kinetic energy theorem states that
- the net work done on an object equals the kinetic energy of the object.
 - the net work done on an object equals the change in the kinetic energy of the object.
 - the change in the net work done on an object equals the kinetic energy of the object.
 - the change in the net work done on an object equals the change in the kinetic energy of the object.

Work and Energy *continued*

- _____ 6. Friction does -400 J of net work on a moving car. How does this affect the kinetic energy of the car?
- a. The kinetic energy increases by 400 J.
 - b. The kinetic energy decreases by 400 J.
 - c. The kinetic energy decreases by 160 kJ.
 - d. The kinetic energy does not change.
- _____ 7. Which of the following does *not* affect gravitational potential energy?
- a. an object's mass
 - b. an object's height relative to a zero level
 - c. the free-fall acceleration
 - d. an object's speed
- _____ 8. How does the elastic potential energy in a mass-spring system change if the displacement of the mass is doubled?
- a. The elastic potential energy decreases to half its original value.
 - b. The elastic potential energy doubles.
 - c. The elastic potential energy increases or decreases by a factor of 4.
 - d. The elastic potential energy does not change.

9. Which has more kinetic energy, a 4.0 kg bowling ball moving at 1.0 m/s or a 1.0 kg bocce ball moving at 4.0 m/s? Explain your answer.

10. A 1.0×10^3 kg sports car is initially traveling at 15 m/s. The driver then applies the brakes for several seconds so that -25 kJ of net work is done on the car. Calculate the initial and final kinetic energy of the car.