Name _____ Class _____ Date _____

Assessment

Work and Energy

Section Quiz: Power

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

_____ **1.** Which of the following refers to the rate at which energy is transferred?
- **a.** work
- **b.** kinetic energy
- **c.** mechanical energy
- **d.** power

_____ **2.** Which of the following refers to the rate at which work is done?
- **a.** energy
- **b.** kinetic energy
- **c.** mechanical energy
- **d.** power

_____ **3.** Which of the following is *not* a valid equation for power?
- **a.** $P = \frac{W}{\Delta t}$
- **b.** $P = \frac{Fd}{\Delta t}$
- **c.** $P = \frac{Fv}{\Delta t}$
- **d.** $P = Fv$

_____ **4.** The SI unit for power is
- **a.** N•m.
- **b.** J.
- **c.** W.
- **d.** hp.

_____ **5.** How much work can a motor with a power output of 25 W do in 1 s?
- **a.** $\frac{1}{25}$ J
- **b.** 1 J
- **c.** 25 J
- **d.** 25 W

_____ **6.** If a machine increases the distance over which work is done,
- **a.** the force required to do the work is less.
- **b.** the force required to do the work is greater.
- **c.** the force required to do the work is the same.
- **d.** the amount of work done is increased.

_____ **7.** If a machine decreases the distance over which work is done,
- **a.** the force the machine applies is less.
- **b.** the force the machine applies is greater.
- **c.** the force the machine applies is the same.
- **d.** the amount of work done is decreased.

_____ **8.** A 100 W light bulb
- **a.** converts 100 J of kinetic energy to potential energy each second.
- **b.** converts 100 J of potential energy to kinetic energy each second.
- **c.** converts 100 J of mechanical energy to nonmechanical energy each second.
- **d.** converts 100 J of electrical energy to other forms of energy each second.

9. Describe the relationship between energy, time, and power.

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10. An engine uses 29 kN of force to power a car at an average speed of 7.5 m/s. What is the average power output of the engine?