Energy, Work, and Power Review

Test Dates: Black – 11/16/17, Gold – 11/17/17

1. Define Potential Energy - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Name each variable and units in the following equation

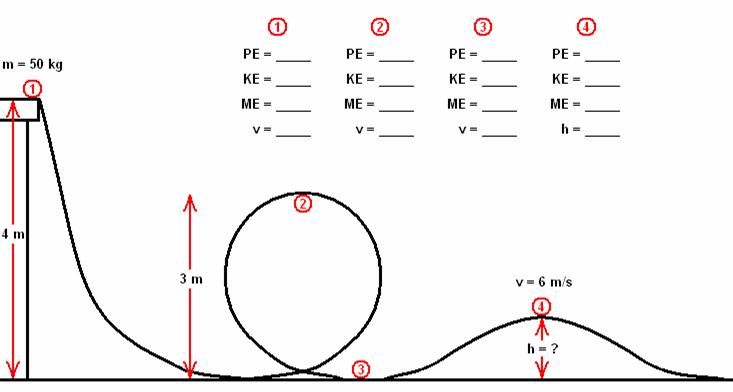
1. Ramiro is sitting at the top of a waterslide that is 12 m high. If his mass is 85 kg, what is his potential energy?

1. Define Kinetic Energy - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Name each variable and units in the following equation

1. A baby bird falls out of its nest at a velocity of 14.7 m/s. If the bird’s mass is 0.114 kg, what is its kinetic energy as it hits the ground?
2. How do you find the mechanical energy of a system? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. The potential energy of a skier going down a mountain slope is J and her kinetic energy is J. What is the mechanical energy of the skier?
2. Use the following diagram to calculate the potential energy (PE), kinetic energy (KE), mechanical energy (ME), and height (h), and/or velocity (v) at each point.



1. A skydiver with a mass of 80 kg is on an airplane flying at an altitude of 1,000 m. Neglecting air resistance, how fast will the skydiver strike a soft landing target down below?
2. A roller coaster system has a potential energy of 640,000 J at its highest point. How fast will the roller coaster car be traveling at half its height?
3. A stone with a mass of 6 kg falls off a cliff that is 120 m tall. What is speed at which it strikes the ground?