



Conservation of Energy Practice

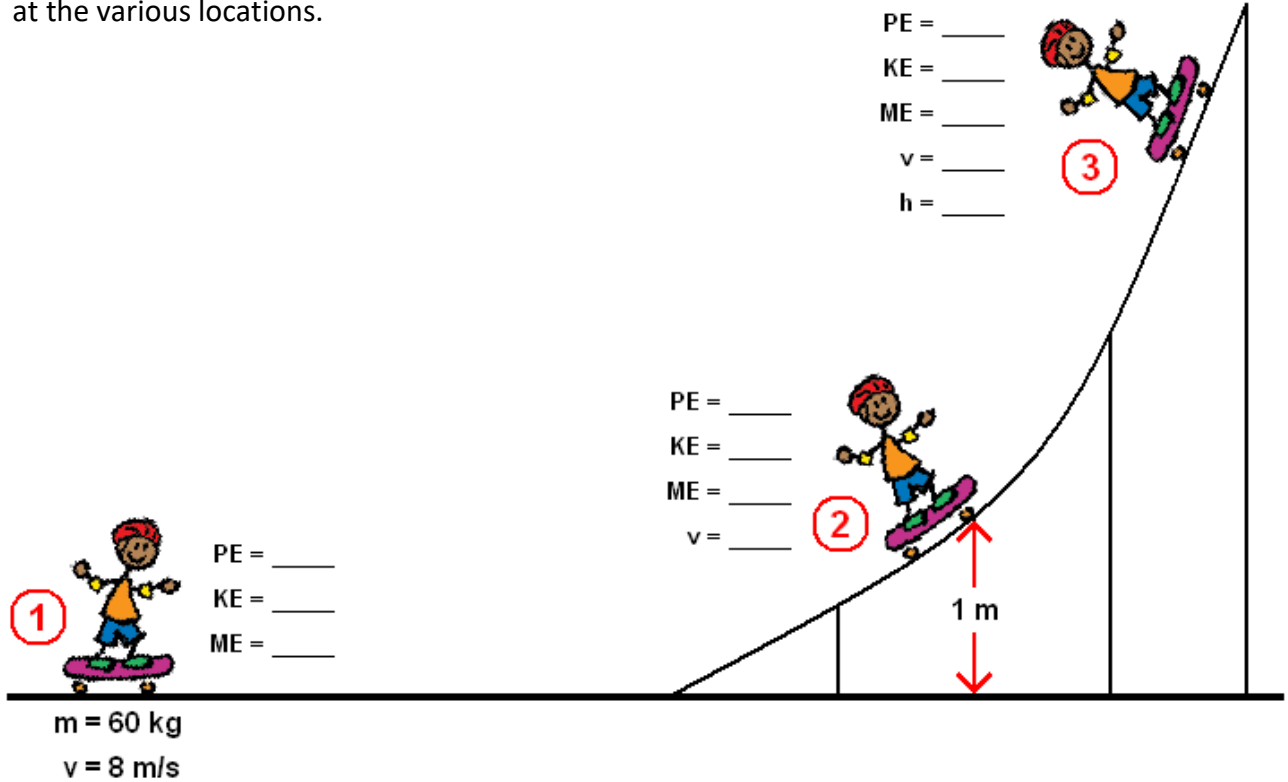


$$KE = \frac{1}{2}mv^2$$

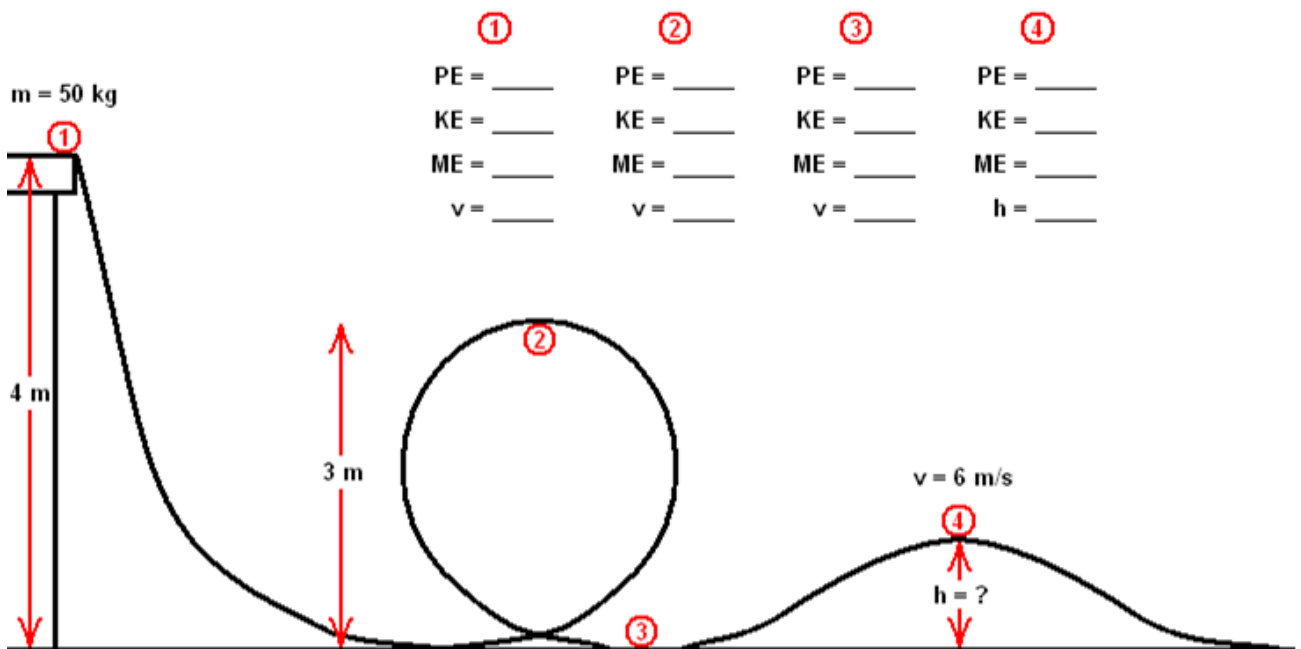
$$PE = mgh$$

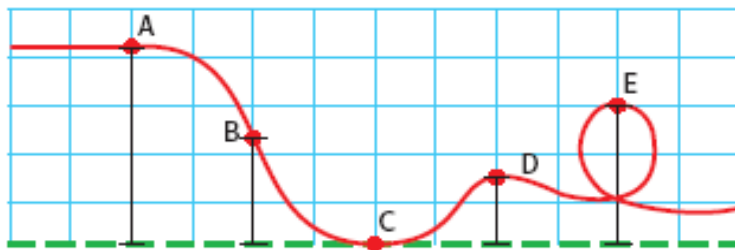
$$ME = KE + PE$$

1. Calculate the potential energy, kinetic energy, mechanical energy, velocity, and height of the skater at the various locations.



2. Calculate the potential energy, kinetic energy, mechanical energy, velocity, and height of the ball at the various locations.





3. The diagram above shows five different points on a roller coaster.
- List the points in order from the point where the car would have the greatest potential energy to the point where it would have the least potential energy.
 - Now list the points in order from the point where the car would have the greatest kinetic energy to the point where it would have the least kinetic energy.
 - Compare the 2 lists to each other. What do you notice about the lists?
4. An object has a mechanical energy of 1575 J and a potential energy of 1265 J.
- What is the kinetic energy of the object?
 - If the mass of the object is 12 kg, what is its speed?
 - How high above ground is the object?
5. A 5 kg object is moving downward at a speed of 12 m/s. If it is currently 2.6 m above the ground...
- What is its kinetic energy?
 - What is its potential energy?