Conservation of Energy Worksheet

Name: ___________________

$$PE_{\text{before}} + KE_{\text{before}} = PE_{\text{after}} + KE_{\text{after}}$$

$$PE = mgh \quad KE = \frac{1}{2} mv^2 \quad g = 9.81 \text{ m/s}^2$$

3. A 100 kg roller coaster comes over the first hill at 2 m/sec ($v_o$). The height of the first hill ($h$) is 20 meters. See roller diagram below.

1) Find the total energy for the roller coaster at the initial point.

2) Find the potential energy at point A using the PE formula.

3) Use the conservation of energy to find the kinetic energy (KE) at point B.

4) Find the potential energy at point C.

5) Use the conservation of energy to find the Kinetic Energy (KE) of the roller coaster at point C.

6) Use the Kinetic Energy from C, find velocity of the roller coaster at point C.
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