

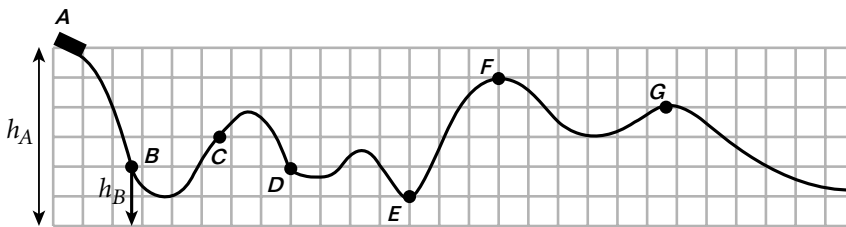
Section
5-3

HOLT PHYSICS

Diagram Skills

Conservation of Energy

A roller-coaster car with a mass of m moves along a smooth track as diagrammed in the graph below. The car leaves point A with no initial velocity and travels to other points along the track. The zero energy level is taken as the energy of point A.



- What is the car's kinetic energy at point A? _____
 - What is the potential energy associated with the car at point A? _____
 - What is the car's kinetic energy at point B? _____
 - What is the potential energy associated with the car at point B? _____
- What is the speed of the car at point A? _____
 - What is the speed of the car at point B? _____
- Assume the mass of the car is 65.0 kg and it starts at 30.0 m above the ground. Use the graph above to find the kinetic energy, potential energy, and velocity for points C, D, E, F, and G to complete the table.

Location	KE_A	PE_A	$KE_{location}$	$PE_{location}$	$v_{location}$
C					
D					
E					
F					
G					

- For each location, what do you notice about the sum $KE_A + PE_A$ compared with the sum $KE_{location} + PE_{location}$?
