Module 08-Lesson 3

Conservation of Mechanical Energy

Question 1: Hailstones typically form around 500 m above the ground. How fast will the hailstones be travelling when they reach the ground? Assume the hailstones start from rest and air drag is negligible.

Question 2: You throw a 1 kg rock into the air from ground level and observe that when it is 10.0 m high, it is travelling upward at 20.0 m/s. What was the rock's speed just as it left the ground?

Problem: A child is on a swing with 3.0-m-long chains. When given a push, the chains will make a maximum angle of 45° with the vertical, before coming to a momentary stop. Calculate the child's maximum speed?