# PHYS 172 Problem of the Week 5 – Spring 2012

An automobile (and its occupants) of total mass M = 2200 kg, is moving through a curved dip in the road of radius R = 18 m at a constant speed v = 12 m/s. For this analysis, you can neglect air resistance. Consider the automobile (and its occupants) as the system of interest.



Calculate the force exerted by the road on the system (car and its occupants). Start from the derivative form of the momentum principle and show all your work.