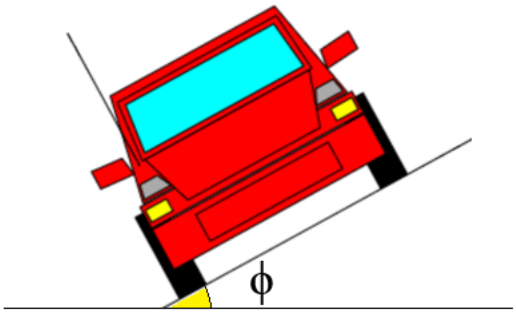
Physics I

Inclined Road

Problem 1.- A curve in a road has a radius R and an angle of inclination ϕ. What is the range of speeds for a car, so it does not slip when it takes the curve, if the coefficient of static friction between the tires and the pavement is μ_s?



Problem 2.- A modern centaur (a biker riding a motorcycle) goes around a 35 m radius turn at 45 km/h. Find the angle of the banking, so friction won't be necessary to keep the creature from sliding.