

Discussion Problem

Physics 1301.400

October 14, 2013

You are driving your car uphill along a straight road. Suddenly, you see a car run a red light and enter the intersection just ahead of you. You slam on your brakes and skid in a straight line to a stop, leaving skid marks 100 feet long. A policeman observes the whole incident and gives a ticket to the other car for running a red light. He also gives you a ticket for exceeding the speed limit of 30 mph. When you get home, you read your physics book and estimate that the coefficient of kinetic friction between your tires and the road was 0.60, and the coefficient of static friction was 0.80. You estimate that the hill made an angle of about 10° with the horizontal. You look in your owner's manual and find that your car weighs 2,050 lbs. Will you fight the traffic ticket in court?