UCONN – Math 1011Q

Group Work on Radical Equations: Skid Marks

An accident investigator is often responsible for determining the speed at which a vehicle was traveling before colliding with another object. Investigators use the formula:

$$S = 5.5\sqrt{cl}$$

where S is the speed of the vehicle (in miles per hour), c is the coefficient of friction between the surface of the road and the tires of the vehicle, and l stands for the length of the longest skid mark on the surface (in feet). If the road is dry the value of c normally ranges between 0.69 and 0.75 for most cars.

1. Find the speed of a car that left a 32-foot long skid mark before hitting a tree. Let $c = 0.72$.

Speed:_____.

2. A defendant in a vehicular homicide trial is arguing that he was not traveling over 40 mph when he struck another vehicle. What is the maximum length of the skid mark his vehicle could leave if this was so? (Assume roads were dry and $c = 0.72$)

Length of skid mark:_____.