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## Question: A car collided with a telephone pole and left 20-ft skid marks ...

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5. A car collided with a telephone pole and left 20-ft skid marks on the dry pavement. Based on the damages sustained, an engineer estimated that the speed at collision was 15 mi/h. If the roadway had a +3% grade, calculate the speed of the car at the onset of skidding.

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### Expert Answer



Santosh Pathak answered this  
2,467 answers

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skid distance  $S = \frac{U^2}{2g(f+n)}$

where  $f \rightarrow$  friction coeff. (0.36)  
 $n \rightarrow \frac{3}{100}$

So, put all values

$$20 = \frac{(U)^2}{2 \times 32.2 \left(0.36 + \frac{3}{100}\right)}$$

$\Rightarrow U = 22.4125 \text{ ft/s}$   
 or  
 $U = \frac{22.4125}{1.467} \Rightarrow U = 15.278 \text{ miles/hr}$

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an engineer estimated that the speed at collision was 15 mi/h. If the roadway had a 3% grade, calculate the speed of the car at the onset of skidding.

A: [See answer](#) 100% (1 rating)

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Vehicles A and B are traveling toward each other in the opposing lanes on a straight segment of a two-lane highway at 35 and 40 mph

[See answer](#)

What is the maximum allowable degree of curve (arc definition) for a two-lane highway if  $e_{\max} = 0.08$ ,  $f_s = 0.12$ , and the design speed

[See answer](#)

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A: [See answer](#) 100% (1 rating)

Q: A car collided with a telephone pole and left 20 ft skid marks on the dry pavement. Based on the damages sustained, an engineer estimated that the speed at collision was 15 mi/h. If the roadway had a 3% grade, calculate the speed of the car at the onset of skidding.

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