Question: A large rock became visible to a driver at a distance of 175 ft. ...

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A large rock became visible to a driver at a distance of 175 ft. Assuming a perception-reaction time of 0.8 s, an initial speed of 42 mi/h, a coefficient of friction of 0.5, and a level roadway, calculate the speed at impact.

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Expert Answer

Aaron Jones answered this
785 answers

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We know that,

$u = 42$ mi/hr

after conversion thespeed becomes,

$u = 61.6$ ft/sec

$a = -fg$

$= -0.5 \times 32.2$

$= -16.1$

Distance covered in time t as follows:

distance = speed × time

$= 61.6 \times 0.8$

$= 49.28$ ft

Remaining distance will be $175 - 49.28 = 125.72$ ft

This distance is covered after breaks are fully applied

$v^2 - u^2 = 2as$

$v^2 - 61.6^2 = 2 \times (-16.1) \times 125.72$

$v = \sqrt{253.624}$

$v = 15.92$ ft/sec

$v = 10.85$ mile/hr

Comment

speed of 42 mph, a coefficient of friction equal to 0.5, and a level roadway, calculate the speed at impact.

A: See answer 100% (1 rating)

Q: A large rock became visible to a driver at a distance of 175ft. Assuming a perception-reaction time of 0.8 s, an initial speed of 42mi/h, a coefficient of friction equal to 0.5, and a level roadway, calculate the speed at impact.

A: See answer 100% (2 ratings)

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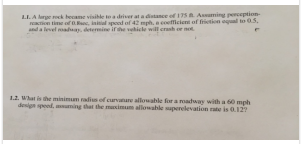

See answer

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

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Q: vehicles Bare traveling toward each other in opposing lanes on a two lane highway If critical rates of angular change of the drivers are at 35 and 40 mi/h, respectively. If the critical rates of angular change of the two drivers are 0.0065 and 0.0055 rad/s determine which driver will be the first to displace ally and (b) the longitudinal distance between vehicles when the...

A: See answer

Q: 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 is 50 mi/h?

A: See answer 80% (5 ratings)

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