Stopping Distance

1. Calculate the braking distance for a car driving at 10, 20, 30, 60, and 90 km/h.

2. Compare the braking distances for a car travelling at 30 km/h and a car travelling at 60 km/h. What do you conclude?

3. Calculate the total stopping distance for a car that is traveling at 60 km/h on a rain-soaked road (use 1.5 seconds as the driver's reaction time).

4. If two cars are moving at 60 km/h, how far behind must the second car travel if it can safely stop?

5. A pedestrian wearing dark clothing at night is only visible at a distance of about 35 m to a driver using low beams. Calculate the maximum speed a car could have such that a driver could brake and avoid a collision (use a 1.5 second reaction time).

6. Some Driver Education experts recommend that "when the vehicle ahead of you passes a certain point, such as a sign, count 'one-thousand-one, one-thousand-two, one-thousand-three.' This takes about 3 seconds. If you pass this same point before you finish counting, you are following too closely." They also suggest a "4 second or more cushion" in inclement weather. Using the laws of physics and your understanding of braking distance, write a rationale for this rule.