



Physics Homework 2

Due 8/22/2016

1. Two cars leave two towns that are 12km apart. Both cars are traveling towards each other at 70km/hour. How long until they pass each other?
2. A car traveling 90km/h is 80m behind a truck traveling 83km/h. How long does it take the car to pass the truck?
3. A bullet is fired from a gun and has a velocity of 215m/s. It hits a tin can and knocks it off a ledge. The sound of the bullet hitting the can is heard by the shooter 6.2 seconds after the bullet was fired. (The speed of sound is 340m/s.) How far away was the can?
4. A car slows down uniformly from 25m/s to rest in 5.3 seconds. How far did the car travel in that time?
5. A runner hopes to finish a 10,000m race in less than 30min. After 27.00 minutes, she still has 1200m to go. The runner accelerates at 0.20 m/s^2 finish in time. How long must she accelerate and what is her new speed?
6. (Honors only) A falling stone take 2.5 seconds to travel past a 2m tall window. From what height above the window did the stone fall?