

PH 201 Recitation

September 29, 2016

1 Acceleration

The Tesla Model S is a sports car with an all-electric engine that can accelerate from 0 to 60 mph in 2.5 seconds. Converting to SI units, 60 mph equals 27 m/s. How far does the Model S travel if it starts from rest and accelerates to 27 m/s in 2.5 seconds?

Imagine you are traveling on the highway at 32 m/s. You see traffic backed up ahead of you, so you decide to slow down. You hit the brakes and decelerate at a constant rate for 25 seconds, at which point your car is at rest. How far did your car travel in this time period?