

Kinematics with Constant Acceleration

A car accelerates from rest to 26.8 m/s (60 mph) in 6.0 s. Assuming constant acceleration, how far did the car travel during this time?

A train at rest on the station accelerates at 10 m/s^2 for 5.0 s, and then travels at constant velocity for 2 minutes (120 s). Is the train's acceleration constant throughout the whole motion?

Lions are capable of very rapid starts. A lion can sustain an acceleration of 9.5 m/s^2 for up to one second. How much time does it take a lion to go from rest to a typical recreational runner's top speed of 4.5 m/s (~10 mph)?