Chapter 2 Example Problems

Example Problem 3-1 : *Kinematic Equations*

A minivan starts at rest and then accelerates at a rate of 3 m/s^2 for 10 seconds. How far does the minivan travel in this time?

Example Problem 3-2

In coming to a stop, a car leaves skid marks 65 meters long on the highway. Assuming a deceleration of 4.0 m/s^2, estimate the speed of the car just before braking.

Example Problem 3-3

You are traveling at 24 m/s on the onramp. As you get ready to merge onto the interstate, you accelerate over a distance of 50 meters to 46 m/s. What was your acceleration?

Example Problem 3-4 : *Free Fall*

The Eiffel Tower is 324 meters tall. If we make the (totally unrealistic) assumption that there is no air resistance, how fast would a penny dropped from the Eiffel Tower be travelling when it hit the ground?

Example Problem 3-5 : *Throwing Cats*

You have a kitten named Mittens. You toss Mittens into the air at an initial velocity of 8 m/s.

(a) How high will Mittens go before coming back down (at which point you will—of course—gently catch her)?

(b) What is the total time that Mittens is in the air?

(c) What is her velocity just before you catch her?