<u>Ch. 2 Worksheet</u>

A key falls from a bridge that is 45 m above the water. It falls directly into a model boat, moving with constant velocity that is 12 m from the point of impact when the key is released. What is the speed of the boat?

A. <u>Problem solving</u> consists of using a generic method, in an orderly manner, for finding solutions to problems. For this problem what problem solving strategy will you be using? In other words, what steps will you follow to solve this problem?

B. <u>Critical thinking</u> is defined as the process of conceptualizing, applying, analyzing, synthesizing, and evaluating information. Let's think critically about the following questions:

   a. Conceptualizing: What will happen to the key when it hits the boat?

   b. Analyzing: What are the directions of motion for the key and boat?

   c. Evaluating: Can we use our equations of linear motion for this problem? Why or why not?

C. Let's solve the problem! (Applying)

Ch. 2 Worksheet

1. An electron has a constant acceleration of +3.2 m/s^2. At a certain instant its velocity is +9.6 m/s. What are its velocities 2.5 s earlier and 2.5 s later?

2. A hot-air balloon is ascending at the rate of 12 m/s and is 80 m above the ground when a package is dropped over the side.
   a. How long does the package take to reach the ground?
   b. With what speed does it hit the ground?