

Advanced Challenge Level 2 Problem #19

A light is at the top of a vertical pole that is 50 feet tall. A rock is dropped from a point that is 10 feet from the light and also 50 feet above the (level) ground. Calculate the speed of the rock and the speed of its shadow on the ground at each of the following times. Show all of your work neatly organized.

1. when $t = 0.5$ sec.
2. when $t = 1.0$ sec.
3. when $t = 1.5$ sec.
4. as the rock hits the ground