

Problems of the Week No. 2

Always show your work to receive credit (NO WORK=NO CREDIT)

1. A rocket is launched at an angle of 60° above the horizontal with an initial velocity of 95m/s . It moves for 3.00s along its initial line of motion with an acceleration of 32.2m/s^2 . At this time its engines fail and the rocket proceeds to move as a free body. Find its horizontal range.

A. 1240m B. 2290m C. 3660m D. 4940m E. 6310m

2. A freshman at Sierra College, inexperienced with Rocklin traffic officers has just received a traffic ticket for speeding. The freshman concerned with the vehicle's speedometer decides to test it on a "Speedometer Test" section of a local highway. As the car passes the start of the marked section, the driver presses on the accelerator. For the entire period, the driver keeps the car at constant acceleration. The driver notices that the car passes the 0.10-mile post 16s after starting the test and 8.0s later the driver passes the 0.20-mile post. What was the speedometer reading at the 0.20-mile post?

A. 28 mi/hr B. 36 mi/hr C. 44 mi/hr D. 52 mi/hr E. 60 mi/hr