Department of Mechanical Engineering

Example - Le 04

2.137   The rocket is fired vertically and tracked by the radar shown. When $q = 60°$, other corresponding measurements give the values of $r = 30{,}000\ ft$, $\ddot{r} = 70\ ft/s^2$, and $\dot{q} = 0.02\ rad/s$. Calculate the velocity and acceleration of the rocket at this position.

        Ans. $v = 1200\ ft/s$

                 $a = 67.0\ ft/s^2$

(*taken from Dynamics, 3rd Edition by Merriam & Kraige*)