A particle of mass $m$ and initial velocity $v_0$ moves along the $x$-axis under the influence of a velocity-dependent attenuation force:

(a) $F(v) = -\alpha \sqrt{v}$,  
(b) $F(v) = -\beta v$,  
(c) $F(v) = -\gamma v^2$.

In each case determine the range $R$ of the particle (maximum displacement) and the duration $T$ of the motion before the particle comes to a stop.

**Solution:**