Projectile in resistive medium

A particle of mass \( m \) is projected vertically upward with initial velocity \( v_0 \) against a uniform gravitational field \( g \) and against a resistive force

(a) \( F(v) = -\beta v \),

(b) \( F(v) = -\gamma v^2 \).

In each case find the maximum height \( h \) reached by the particle and the time \( T \) it takes to get there.

Solution: