Chapter 7, Solution 83.

$$v(\infty) = 120, \qquad v(0) = 0, \qquad \tau = RC = 34x10^{6}\, x15x10^{-6} = 510s$$

$$v(t) = v(\infty) + [v(0) - v(\infty)]e^{-t/\tau} \qquad \longrightarrow \qquad 85.6 = 120(1 - e^{-t/510})$$

Solving for t gives

$$t = 510 \ln 3.488 = 637.16s$$

speed = 4000m/637.16s = **6.278m/s**