

FRQ-2 Answers

a. $V_T = \frac{mg}{B}$ (or $V_T = \frac{mg}{bA}$ if using original variables)

b. velocity as a function of time: $V = \frac{mg}{B} (1 - e^{-\frac{Bt}{m}})$ or $V = \frac{mg}{bA} (1 - e^{-\frac{bAt}{m}})$

time when $v = \frac{1}{3} V_T$: $t = -\frac{m}{B} \ln\left(\frac{2}{3}\right)$ or $t = \frac{m}{B} \ln\left(\frac{3}{2}\right)$
or $t = -\frac{m}{bA} \ln\left(\frac{2}{3}\right)$ or $t = \frac{m}{bA} \ln\left(\frac{3}{2}\right)$

Hints for b: Did you apply Newton's second law?

Did you change "a" to " $\frac{dv}{dt}$ "?

Did you refer to your notes page from last week for help with the integration?

c. Check your answers using your notes page from last week.