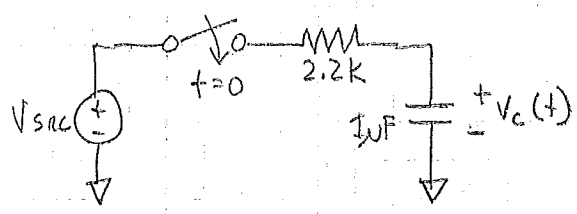
2. For the circuit below, at what time will $V_c(t)$ reach 99% of V_{SRC}?



$$V_c(t) = V_{SRC}\left(1 - e^{-t/RC}\right)$$

rephrasing the question now, is...

At what time does $\left(1 - e^{-t/RC}\right) = 0.99$

$$0.99 = 1 - e^{-t/(2.2\times10^{3})(1\times10^{-6})}$$

$$0.01 = -e^{-t/2.2\times10^{-3}}$$

$$-4.61 = -t/2.2\times10^{-3}$$

$$\underline{\underline{t = 10.1\,ms}}$$

This result validates the rule-of-thumb that tells us that after 10τ, V_c is essentially equal to V_{SRC}.