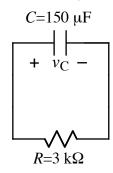


Ex: Find the voltage, $v_{\rm C}$, across the capacitor in the circuit below for t > 0 if $v_{\rm C}(t=0) = 100 \,\mu{\rm V}$.



Sol'N: The form of solution is an exponential.

$$v_C(t) = Ae^{-t/RC}$$

The value of the constant, A, is chosen to match the initial voltage on C, since the exponential has a value of unity at t = 0: $e^0 = 1$.

$$v_C(t) = 100 \ \mu \text{V} \cdot e^{-t/450 \text{ms}}$$