Prefix	Abbreviation	Value
Giga	G	10^9
Mega	M	10^6
Kilo	k	10^3
milli	m	10^{-3}
micro	μ	10^{-6}
nano	n	10^{-9}
pico	p	10^{-12}

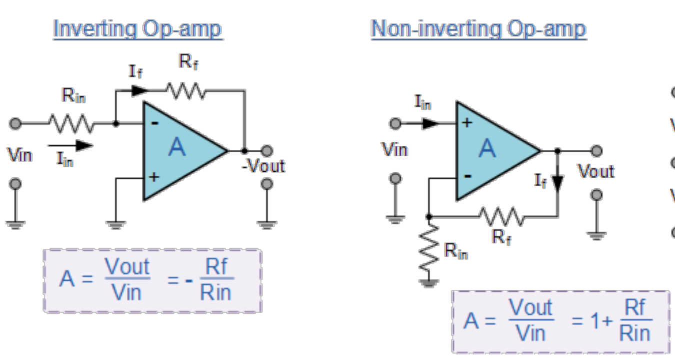
	Forced Response Solution for $\tau = RC = \frac{L}{R}$
Step	$v_F(t) = Ke^{-\frac{t}{\tau}}$
Sinusoid	$v_F(t) = a\cos(\omega t) + b\sin(\omega t)$ where $a = \frac{V_A}{1+\omega\tau}$ $b = \frac{\omega\tau V_A}{1+\omega\tau}$
Exp	$v_F(t) = Ae^{-\alpha t}$ where $A = \frac{V_A}{1-\tau\alpha}$

		Eqn	Units
Voltage	V	$v = \frac{dw}{dq}$	$Volts = \frac{Joules}{Coulomb}$
Current	I	$i = \frac{dq}{dt}$	$Amps = \frac{Coulomb}{seconds}$
Power	P	$p = \frac{dw}{dt} = \frac{dw}{dq}\frac{dq}{dt} = vi$	$Watts = \frac{Joules}{Seconds}$

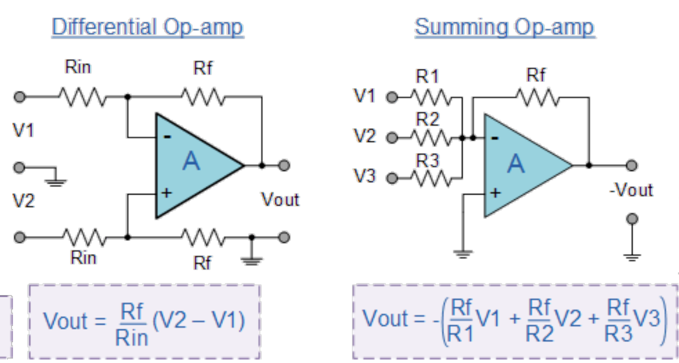
	Series	Parallel
Resistor	$R_{eq} = \sum_{i=1}^{n} R_i$	$\frac{1}{R_{eq}} = \sum_{i=1}^{n} \frac{1}{R_i}$
Capacitor	$\frac{1}{C_{eq}} = \sum_{i=1}^{n} \frac{1}{C_i}$	$C_{eq} = \sum_{i=1}^{n} C_i$
Inductor	$L_{eq} = \sum_{i=1}^{n} L_i$	$\frac{1}{L_{eq}} = \sum_{i=1}^{n} \frac{1}{L_i}$

Part	Transient	Steady State
Capacitor	short	open
Inductor	open	short

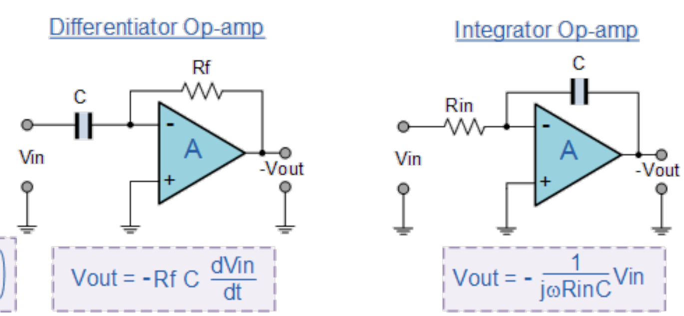
Part	Transient	RX Circuit Solution
Capacitor	$i(t) = -C\frac{\partial v}{\partial t}$	$v(t) = [(V_o - V_A)e^{-\frac{t}{R_T C}} + V_A]u(t)$
Inductor	$v(t) = L\frac{\partial i}{\partial t}$	$i(t) = [(I_o - I_A)e^{-\frac{R_T t}{L}} + I_A]u(t)$



(a) 1



(b) 2



(c) 3