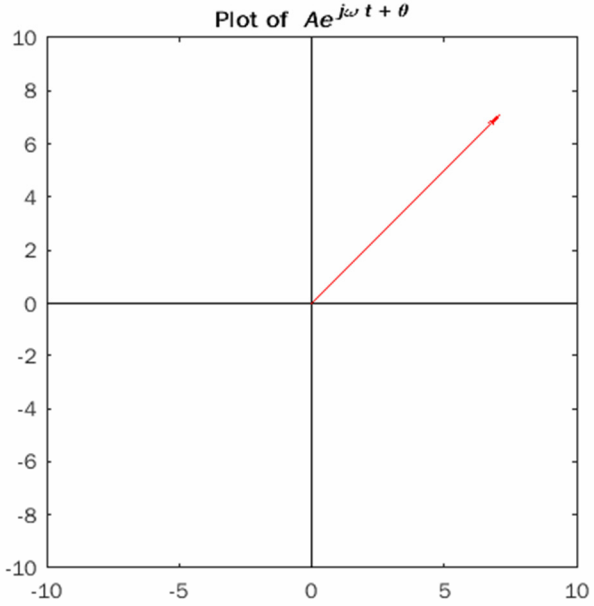
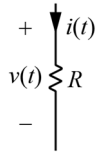
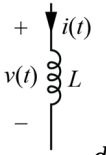
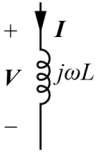
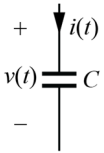
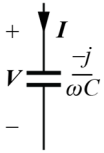

Plot of $Ae^{j\omega t + \theta}$
10
8
6
4
2
0
-2
-4
-6
-8
-10
-10
-5
0
5
10

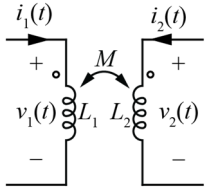
Phasor Transformation

Phasor Notation

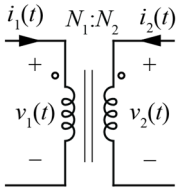
Phasor Circuit Elements

Time Domain	Phasor Domain
 $v(t) = i(t)R$	
 $v(t) = L\frac{di}{dt}$	
 $i(t) = C\frac{dv}{dt}$	

Time Domain

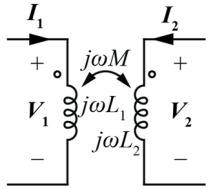


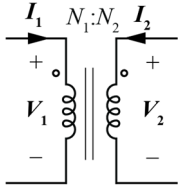
$$v_1(t) = L_1 \frac{di_1}{dt} + M \frac{di_2}{dt}$$
$$v_2(t) = M \frac{di_1}{dt} + L_2 \frac{di_2}{dt}$$



$$\frac{v_1(t)}{N_1} = \frac{v_2(t)}{N_2}$$
$$N_1 i_1(t) + N_2 i_2(t) = 0$$

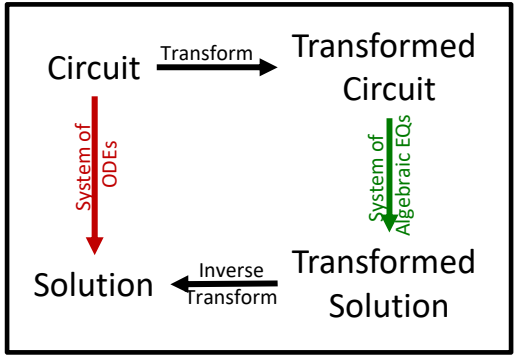
Phasor Domain



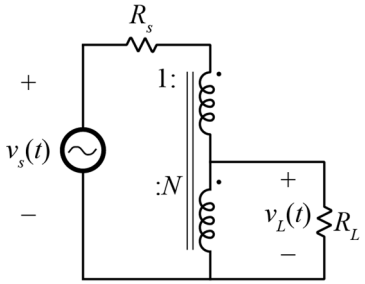


Impedance

Phasor Circuit Analysis



Example Problem



Find $v_L(t)$ for $v_s(t) = 170\cos(2\pi 60t)$ and for $R_s = 10\ \Omega$, $N = 0.1$, and $R_L = 50\ \Omega$