EE 206: Homework #8

Sinusoidal Source, Complex Numbers, Complex Impedance
Due Monday, March 25th

1) Convert to Vp, Vpp, Vrms

Vp (peak)	Vpp (peak-to-peak)	Vrms
10V		
	10V	
		10V

2) Find Y

2a) $Y = \left(\frac{2+j3}{5+j7}\right) + \left(\frac{10-j3}{8+j5}\right)$

2b) $Y = \left(\frac{100(s+3)}{s(s+5)(s+10)}\right)_{s=j2}$

2c) $Y = \left(\frac{5s^2+10s+20}{s^3+6s^2+11s+6}\right)_{s=j3}$

3) Express V in phasor form.

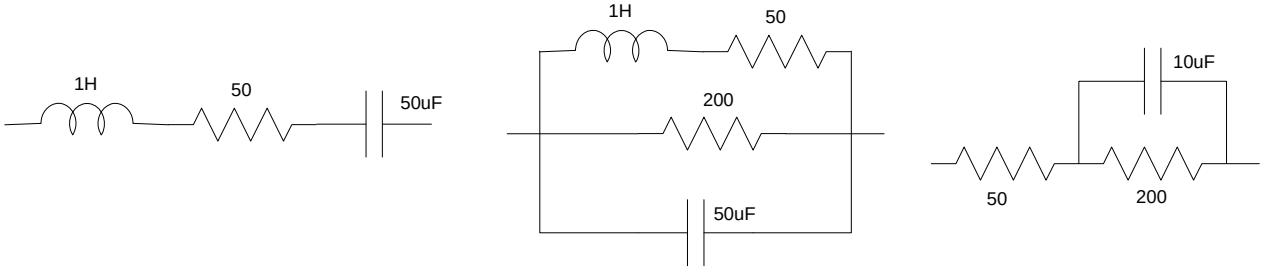
3a) $V = 3\cos(10t) + 7\sin(10t)$

3b) $V = 3\cos(20t - 30^0) + 7\cos(20t + 5^0)$

3c) $V = 6\cos(5t - 50^0) + 8\sin(5t)$

4) Determine the impedance of the following circuits assuming the frequency is 50 rad/sec

5) Determine the impedance of the following circuits assuming the frequency is 300 rad/sec



Problem 4 & 5