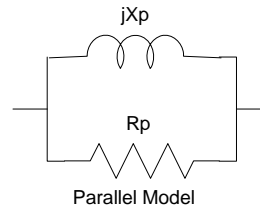
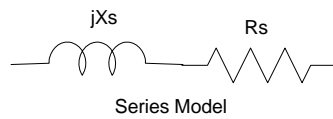


Series and Parallel with Phasors

EE 206 Practice Problems

Find the series model (R_s, jX_s) and parallel model (R_p, jX_p) so that the total impedance is

- 1) $Z = 100 + j200$
- 2) $Z = 10 + j300$
- 3) $Z = 0.1 + j3$
- 4) $Z = 200 + j10$



Solution

Z	Rs	jXs	Rp	jXp
1) $Z = 100 + j200$	100	j200	500	j250
2) $Z = 10 + j300$	10	j300	9,010	j300.33
3) $Z = 0.1 + j3$	0.1	j3	90.1	j3.003
4) $Z = 200 + j10$	100	j10	200.5	j4010

Sample Calculations

$$R_s = \text{real}(Z)$$

$$X_s = \text{imag}(Z)$$

$$\frac{1}{R_p} = \text{real}\left(\frac{1}{Z}\right)$$

$$\frac{1}{X_p} = -\text{imag}\left(\frac{1}{Z}\right)$$