

1. Draw the same circuit. Use these values for components:
 $V_s = 2e^{j15^\circ}$ V, $I_s = 8e^{j75^\circ}$ mA, $3 \text{ k}\Omega$ (for both R's), $j5 \text{ k}\Omega$ for L on left, $j2.5 \text{ k}\Omega$ for L on right, $-j2 \text{ k}\Omega$ for C on bottom, $-j20/7 \text{ k}\Omega$ for C on right, $6I_x$ for dependent src, I_x for current thru L on right.
2.
 - a) R, $1 \text{ k}\Omega$
 - b) C, $2 \mu\text{F}$
 - c) L, 40 mH
 - d) C, 50 nF
 - e) L, 0.8 H
3.
$$z = \frac{R}{1 + R^2[\omega C - 1/(\omega L)]^2} - j \frac{R^2[\omega C - 1/(\omega L)]}{1 + R^2[\omega C - 1/(\omega L)]^2}$$
4. $10 \text{ k}\Omega$
5.
 - a) $v_R(t) = 1.2\sqrt{10} \cos(1Mt - 18.4^\circ)$ V, $v_L(t) = 0.4\sqrt{10} \cos(1Mt + 71.6^\circ)$ V
 - b) $i_R(t) = \frac{10}{\sqrt{61}} \cos(10kt - 20.2^\circ)$ A, $i_C(t) = \frac{12}{\sqrt{61}} \cos(10kt + 69.8^\circ)$ A