ECE262   Homework 7   February 2009

The Blackboard window for this homework will close at 9:00 am on Monday March 23

For the circuit of Figure 1 below the following component values are given:

Ca = 10µF	Rd = 33Ω	Lc = 47mH	f = 60Hz
Rb = 13Ω	Rc = 12Ω	Cc = 25µF	
Ri = 87Ω	Li = 30mH	M = 19mH	

The supply voltage labeled Vs is given by vs(t) = 12.cos(ωt + π/4) {*Note the phase*)
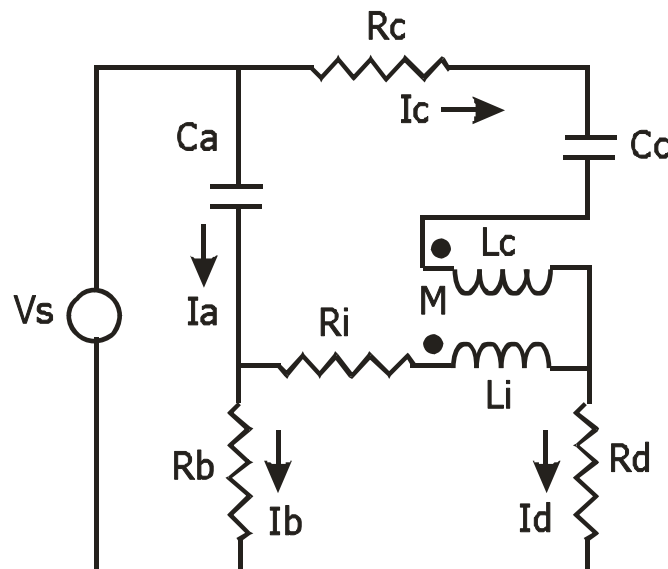

Figure 1

    (1) Determine the amplitude of the current Ia in mA
    (2) Determine the phase of the current Ia in degrees
    (3) Determine the amplitude of the current Ib in mA
    (4) Determine the phase of the current Ib in degrees
    (5) Determine the amplitude of the current Ic in mA
    (6) Determine the phase of the current Ic in degrees
    (7) Determine the amplitude of the current Id in mA
    (8) Determine the phase of the current Id in degrees
    (9) Determine the value of the coupling coefficient k