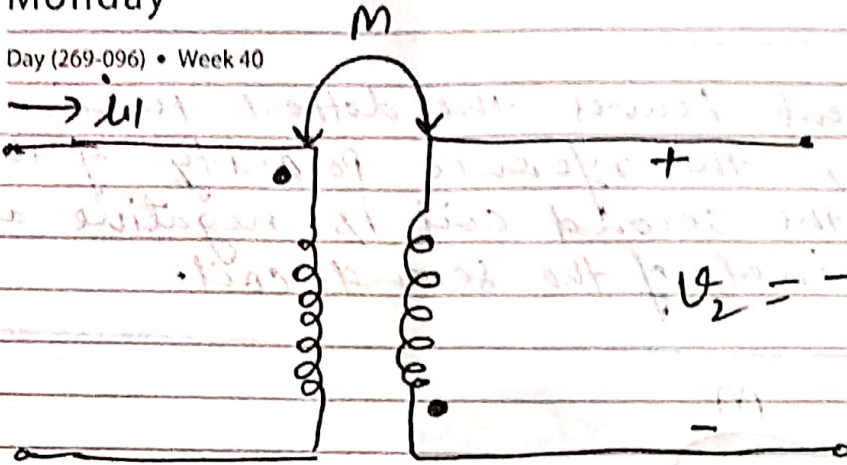
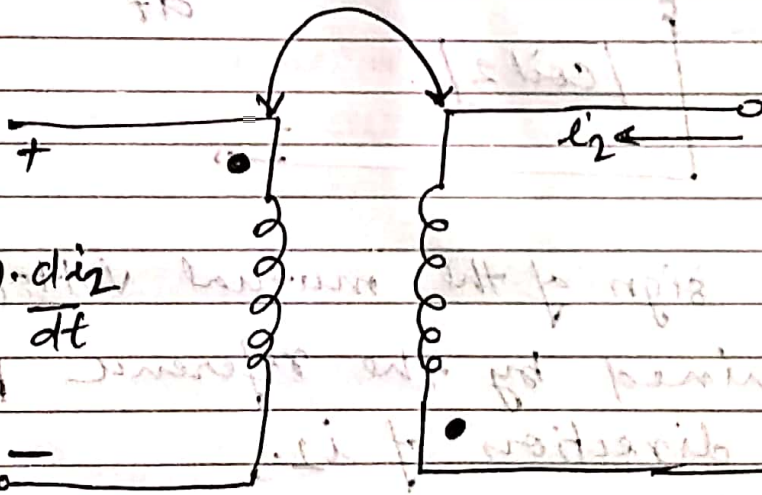


$\rightarrow i_1$



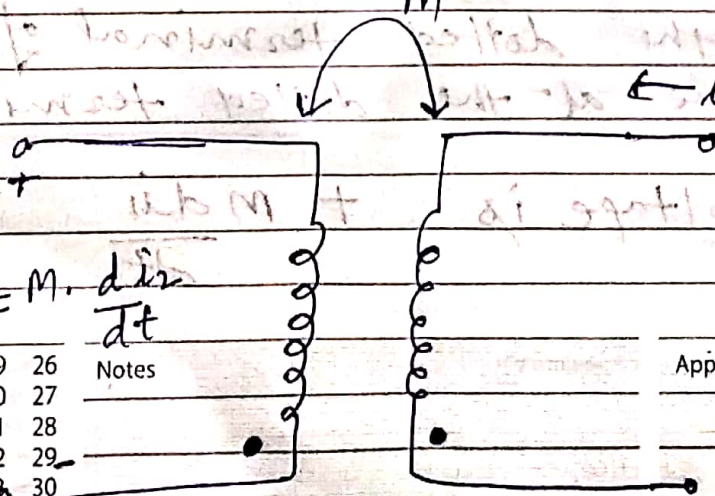
$$V_2 = -M \frac{di_1}{dt}$$

$\frac{M \cdot i_1}{l_1} = M$



$$V_1 = -M \cdot \frac{di_2}{dt}$$

M



$$V_1 = M \cdot \frac{di_2}{dt}$$

September'11

Monday	5	12	19	26
Tuesday	6	13	20	27
Wednesday	7	14	21	28
Thursday	1	8	15	22
Friday	2	9	16	23
Saturday	3	10	17	24
Sunday	4	11	18	25

Notes

Appointment

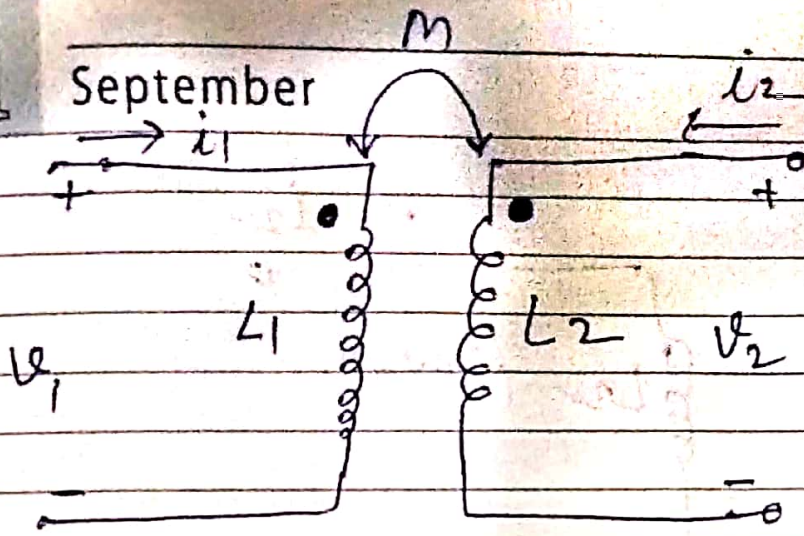
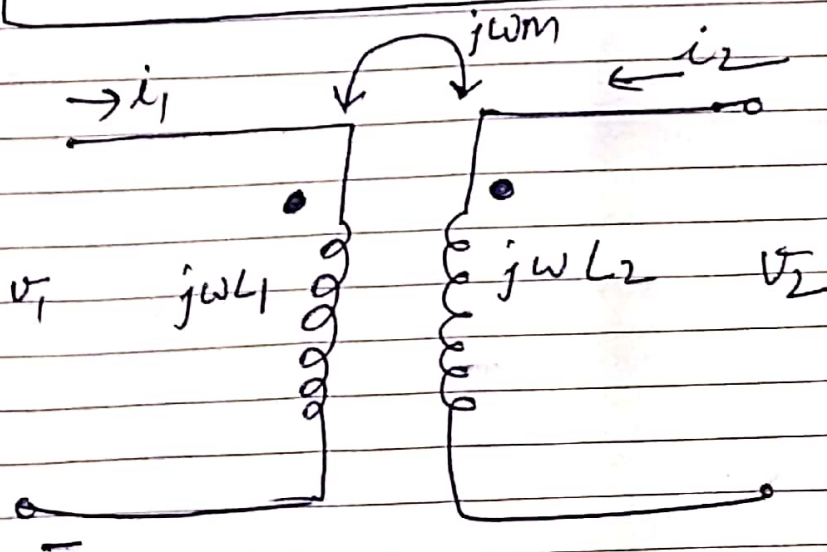


fig: Time domain ckt

$$\left. \begin{aligned} v_1 &= L_1 \frac{di_1}{dt} + M \frac{di_2}{dt} \\ v_2 &= L_2 \frac{di_2}{dt} + M \frac{di_1}{dt} \end{aligned} \right\} \text{--- (1)}$$

Reversing the dots, Reversing the assumed direction of currents or voltages in either winding, will change the sign of mutual terms in eqn (1)



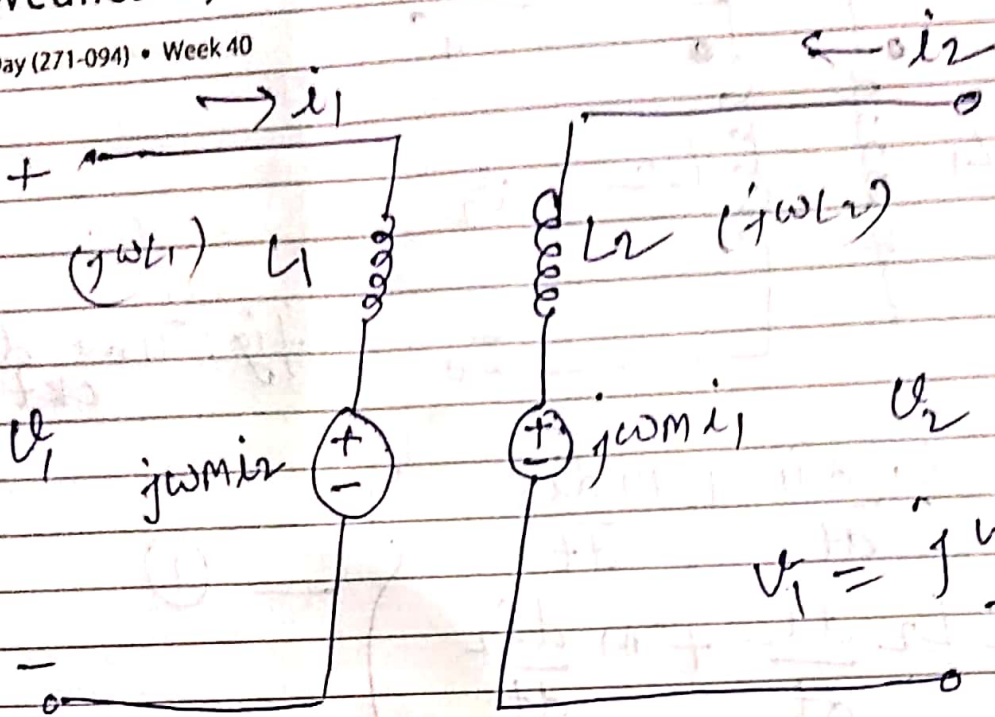
$$\begin{aligned} X_M &= \omega M \\ X_{L1} &= \omega L_1 \\ X_{L2} &= \omega L_2 \end{aligned}$$

fig: frequency-domain circuit

Notes

Appointment

		October 11				
Monday	31	3	10	17	24	
Tuesday		4	11	18	25	
Wednesday		5	12	19	26	
Thursday		6	13	20	27	
Friday		7	14	21	28	
Saturday	1	8	15	22	29	
Sunday	2	9	16	23	30	



$j\omega M$ Mutual inductance as voltage generator.

September '11

Monday	5	12	19	26	
Tuesday	6	13	20	27	
Wednesday	7	14	21	28	
Thursday	1	8	15	22	29
Friday	2	9	16	23	30
Saturday	3	10	17	24	
Sunday	4	11	18	25	

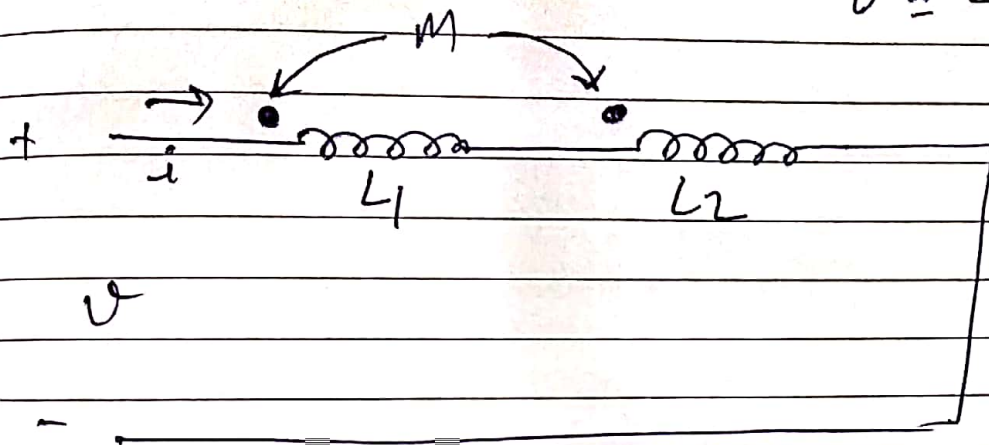
Notes

Appointment

Two coils ARE IN SERIES

Day (272-093) • Week 40

$$V = L_1 \frac{di}{dt} + M \frac{di}{dt} + L_2 \frac{di}{dt} + M \frac{di}{dt}$$



$$\therefore V = (L_1 + L_2 + 2M) \frac{di}{dt}$$

(2)

fig: Time domain ckt.

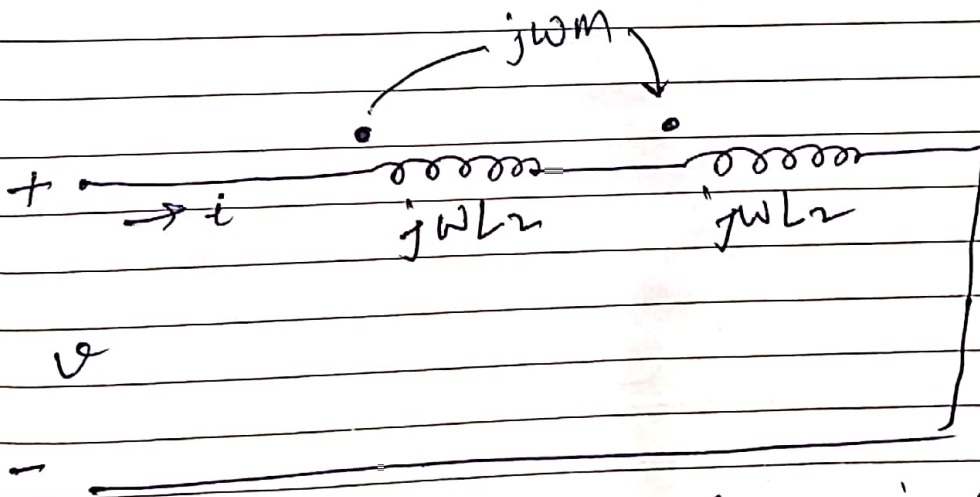
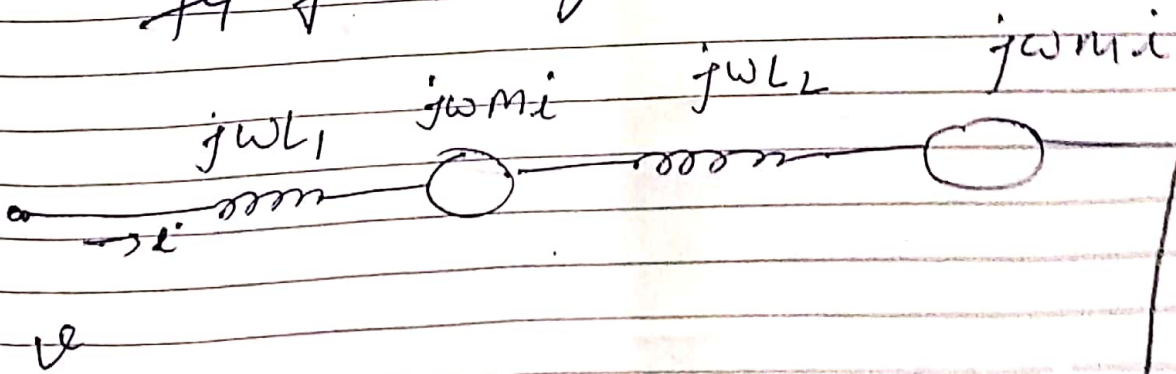


fig frequency domain ckt.



Notes

Appointment

Month	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Monday														
Tuesday														
Wednesday														
Thursday														
Friday														
Saturday														
Sunday														

fig ckt with mutual inductance voltage generator