

School of Information, Computer and Communication Technology
Sirindhorn International Institute of Technology
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ECS204 Quiz 3 Sample

Rules: Closed book. Closed notes. No Calculator. Do not cheat. Do not panic.

Consider the circuits in Figure 1.

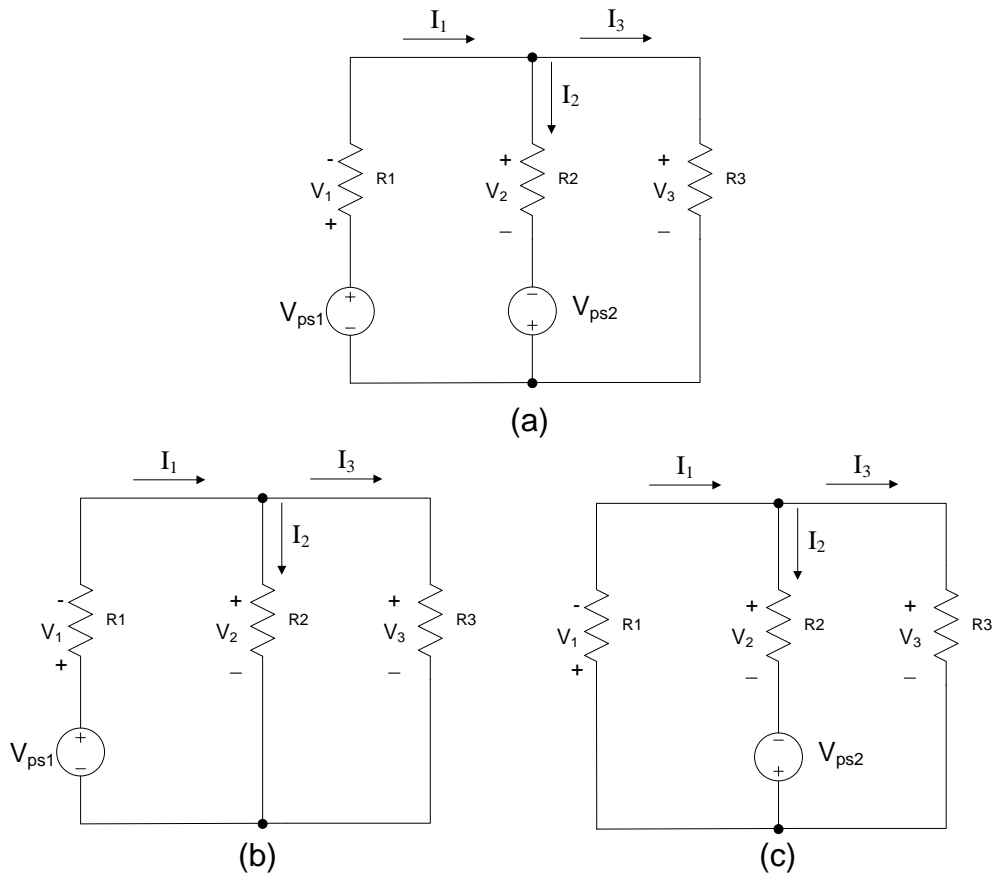


Figure 1 Circuits to verify superposition theorem in lab 03:
 (a) original circuit, (b) modified circuit with V_{ps1} only, and (c) modified circuit with V_{ps2} only.

Complete the following table:

V_{ps1} Only (Fig. 1b)				V_{ps2} Only (Fig. 1c)				V_{ps1} and V_{ps2} together (Fig. 1a)			
I_1	8 A	V_1	16 V	I_1	12 A	V_1	24 V	I_1		V_1	
I_2	4 A	V_2	16 V	I_2		V_2	72 V	I_2		V_2	
I_3		V_3		I_3	-6 A	V_3		I_3		V_3	

Warning: Watch out for the sign of the current/voltage.

Hints:

- Look at each figure. How are the currents I_1 , I_2 , and I_3 related?
- In Figure 1b or Figure 1c, can you find the missing value of the voltage using the values of the voltage that are given?
- What does the superposition theorem tell you about the relationship between the values of the current in Figure 1b-c and the value of the current in Figure 1a?