Ch1-5

- Chapter 1-2
  - Independent source

    (a)   (b)   (c)   (d)

    Fig. 2.4. (a) CCVS. (b) CCCS. (c) VCVS. (d) VCCS.

  - Switches

    (a)   (b)   (c)

    Fig. 2.5. (a) Initially open. (b) Initially closed. (c) Two-throw switch.
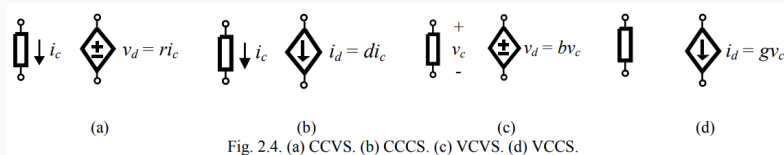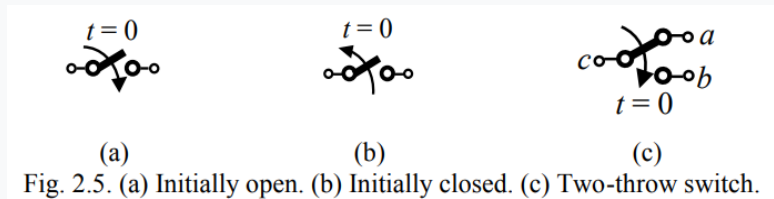
- Chapter 3
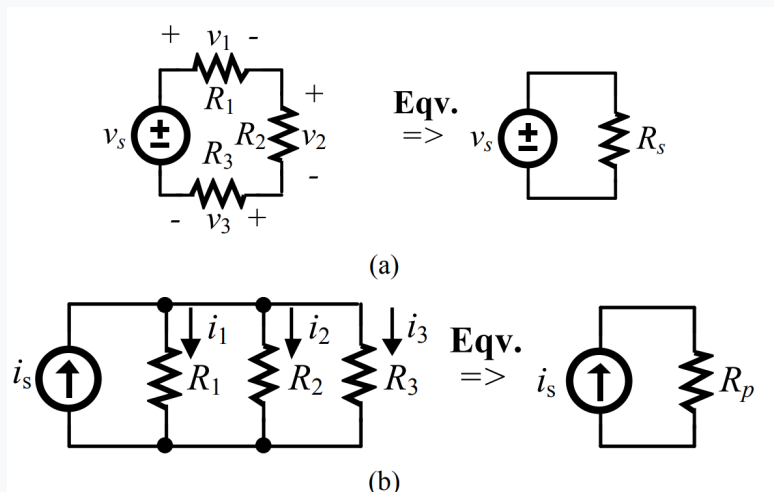 - Kirchhoff's Laws
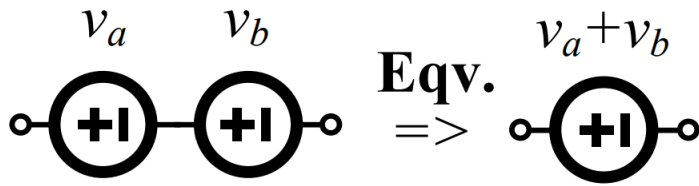   - KCL
    - KVL
  - Voltage Divider and Current Divider
  -
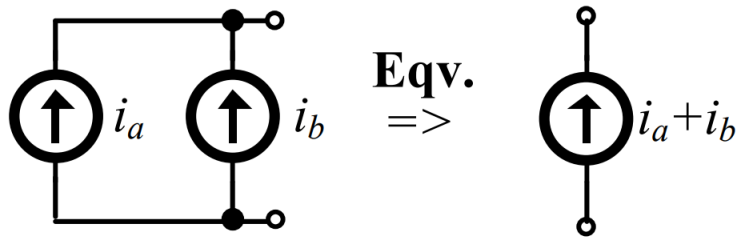

    (a)

    (b)

  - Series Resistor and Parallel Resistor
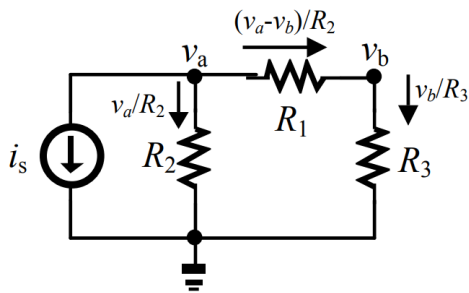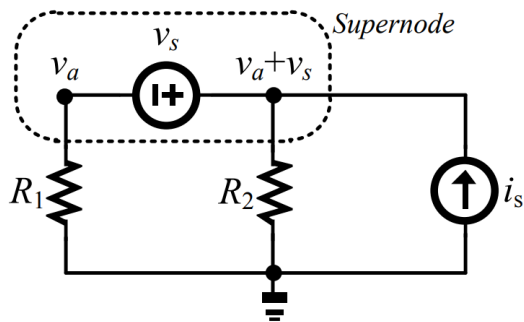 - Series Voltage Source and Parallel Current Source
    -

(a)

(b)

- Chapter 4
  - Node Voltage Analysis(KCL)(Q1)
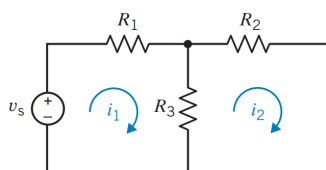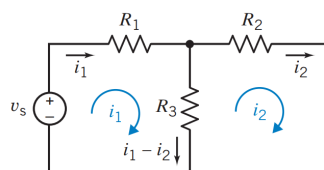   -

$(v_a-v_b)/R_2$

v_a v_b

v_b/R_3

v_a/R_2

R_1

i_s R_2 R_3

(a)

Supernode

v_s

v_a v_a+v_s

R_1 R_2 i_s

(b)

Fig. 4.1. (a) Node voltage analysis. (b) Supernode.

- Mesh Current Analysis(KVL)
  -

R_1 R_2

v_s i_1 R_3 i_2

(a)

R_1 R_2

i_1 i_2

v_s i_1 R_3 i_2

$i_1 - i_2$

(b)

The circuit shows: 10 V source, 1 Ω, 2 Ω, 3 Ω, 2 Ω, 1 Ω resistors, a 5 A current source, with mesh currents i_1, i_2, i_3, and a highlighted **Supermesh**.
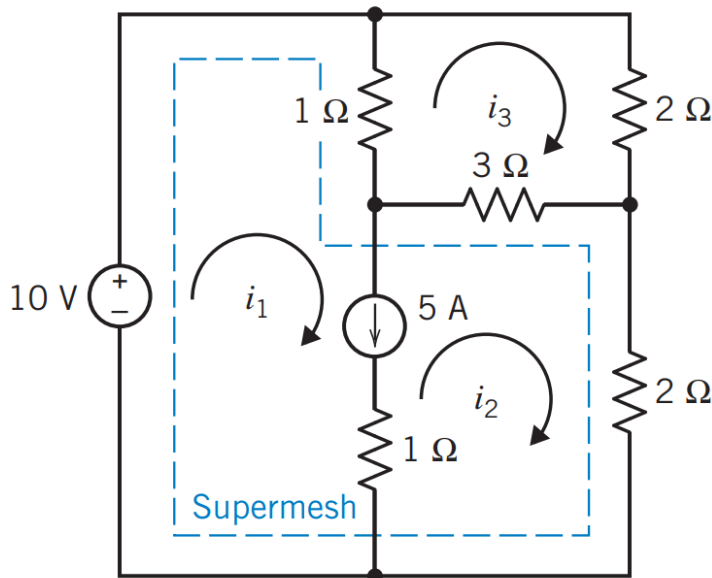
- Compare NVA & MCA

- Chapter 5

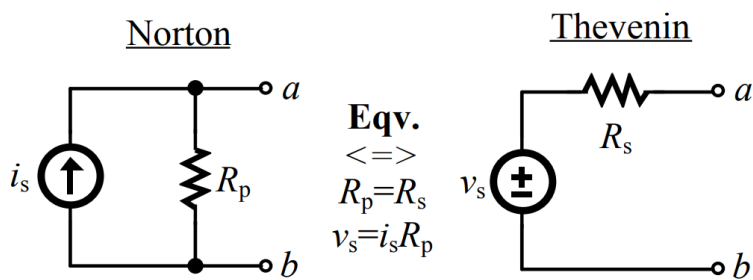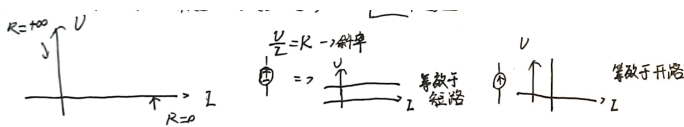 - Source transformation

    -

Fig. 5.1. Source transformation.

  - Superposition(Q2)——留一个dependent source, V-short circuit; I- open circuit

  - Thevenin' s Theorem and Norton's Equivalent Circuit(Q3)
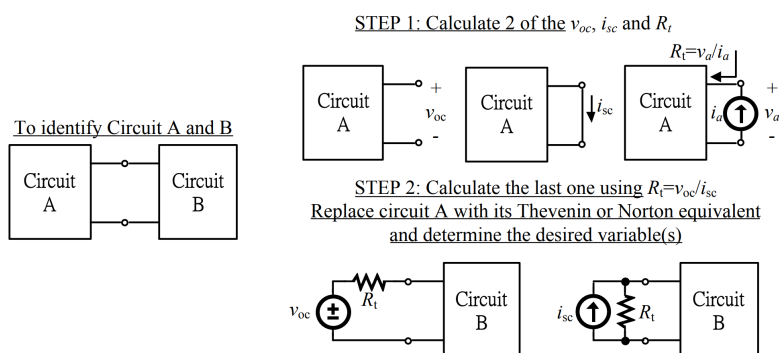
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Fig. 5.2. Thevenin theorem.
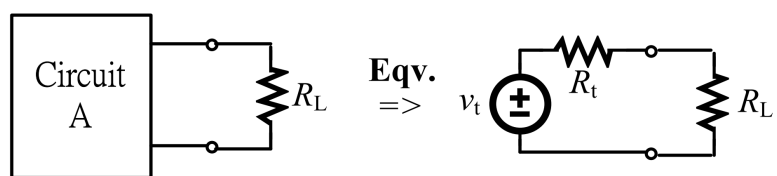
  - Maximum Power Transfer

Fig. 5.3. Maximum power transfer.

$$p_{\max} = \frac{v_s{}^2 R_t}{(2R_t)^2} = \frac{v_s{}^2}{4R_t}$$

以上内容整理于 幕布文档