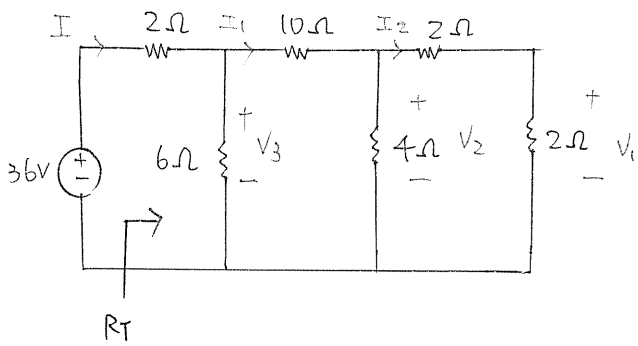
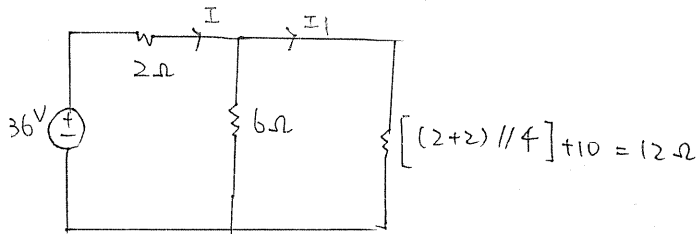


6.6 下圖係階梯電路，試利用分流及分壓定理，求出 I_1 , I_2 , V_1 , V_2 和 V_3 的值

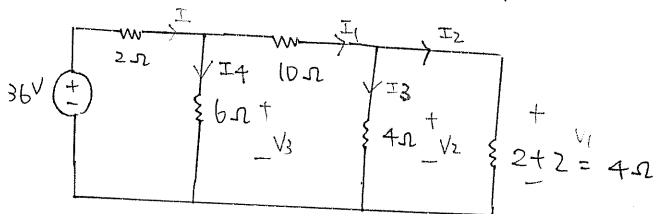


$$R_T = \{ [(2+2) \parallel 4] + 10 \} \parallel 6 + 2 = 6 \Omega$$

$$I = \frac{36}{6} = 6 \text{ A}$$



$$I_1 = 6 \times \frac{6}{12+6} = 2 \text{ A} \quad \#$$



$$I_2 = 2 \times \frac{4}{4+4} = 1 \text{ A} \quad \#$$

$$V_1 = I_2 \times 2 = 1 \times 2 = 2 \text{ V} \quad \#$$

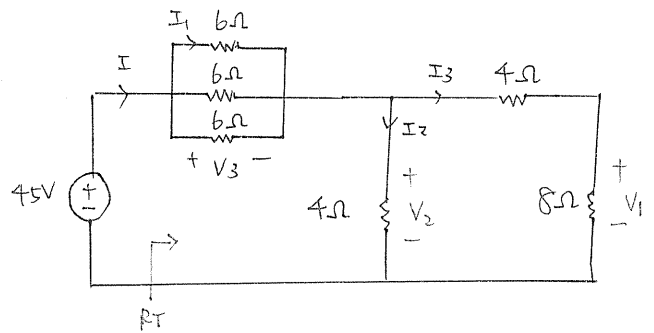
$$I_3 = I_1 - I_2 = 1 \text{ A}$$

$$V_2 = 1 \times 4 = 4 \text{ V} \quad \#$$

$$I_4 = I - I_1 = 6 - 2 = 4 \text{ A}$$

$$V_3 = 6 \times 4 = 24 \text{ V} \quad \#$$

6.7 試求下圖所示階梯電路的 I , I_1 , V_1 , V_2 和 V_3 的值。



$$R_T = (4+8) \parallel 4 + [(6 \parallel 6) \parallel 6] = 5 \Omega$$

$$I = \frac{45}{5} = 9 \text{ A} \quad \#$$

$$I_1 = 9 \times \frac{3}{6+3} = 3 \text{ A} \quad \#$$

$$I_2 = 9 \times \frac{12}{4+12} = \frac{27}{4} \text{ A}$$

$$V_2 = \frac{27}{4} \times 4 = 27 \text{ V} \quad \#$$

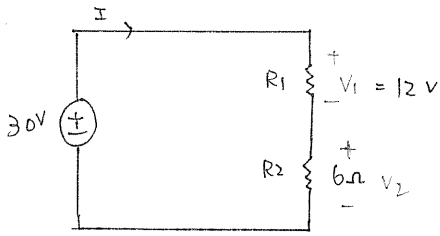
$$I_3 = I_1 - I_2 = 9 - \frac{27}{4} = \frac{9}{4} \text{ A}$$

$$V_1 = \frac{9}{4} \times 8 = 18 \text{ V} \quad \#$$

$$V_3 = 3 \times 6 = 18 \text{ V} \quad \#$$

6.1 如下圖所示電路圖中，若 $V_1 = 12\text{ V}$

$V_T = 30\text{ V}$ $R_2 = 6\ \Omega$. 試求 (a) 利用分壓
 求出 R_1 . (b) I 值



$$V_2 = 30 - 12 = 18\text{ V}$$

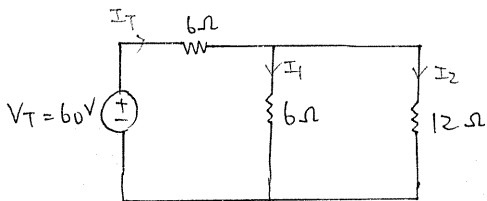
$$I = \frac{V_2}{R_2} = \frac{18}{6} = 3\text{ A} \quad \#$$

$$R_1 = \frac{V_1}{I} = \frac{12}{3} = 4\ \Omega \quad \#$$

6.2 有 m 個電阻器的分壓器，所有電阻
 都是 R ，若 V_T 為總電壓，試求每一電
 阻器的端電壓

$$\frac{V_T}{mR} \times R = \frac{V_T}{m} \quad \#$$

6.3 如下圖所示之電路中，試利用
 分流定理 I_1 和 I_2 之值



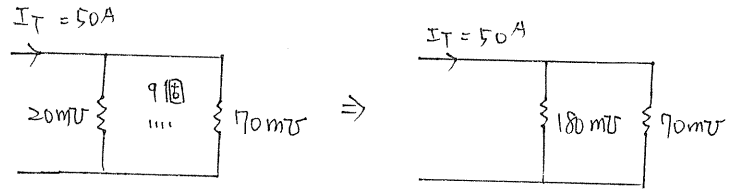
$$R_T = (12 \parallel 6) + 6 = 10\ \Omega$$

$$I_T = \frac{60}{10} = 6\text{ A}$$

$$I_1 = 6 \times \frac{12}{6+12} = 4\text{ A} \quad \#$$

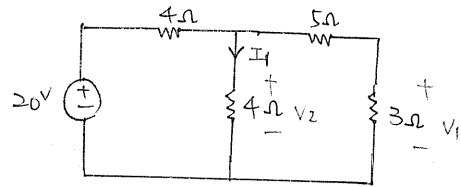
$$I_2 = 6 \times \frac{6}{6+12} = 2\text{ A} \quad \#$$

6.4 有 10 個排電阻所組成的分流器，
 其中 9 個具有相同 $20\text{ m}\Omega$ 的電導，
 第 10 個為 $70\text{ m}\Omega$. 若進入分流器
 總電流 $I_T = 50\text{ mA}$. 試求進入第 10
 個電阻器的電流.



$$50 \times \frac{70}{180+70} = 14\text{ mA} \quad \#$$

6.5 如下圖所示之電路，試利用
 分流定理和分壓定理求 I_1 、 V_1 之值.



$$R_T = [(3+5) \parallel 4] + 4 = \frac{20}{3}\ \Omega$$

$$I_T = \frac{20}{\frac{20}{3}} = 3\text{ A}$$

$$I_1 = 3 \times \frac{8}{4+8} = 2\text{ A}$$

$$I_2 = 3 - 2 = 1\text{ A}$$

$$V_1 = I_2 \times 3 = 1 \times 3 = 3\text{ V} \quad \#$$