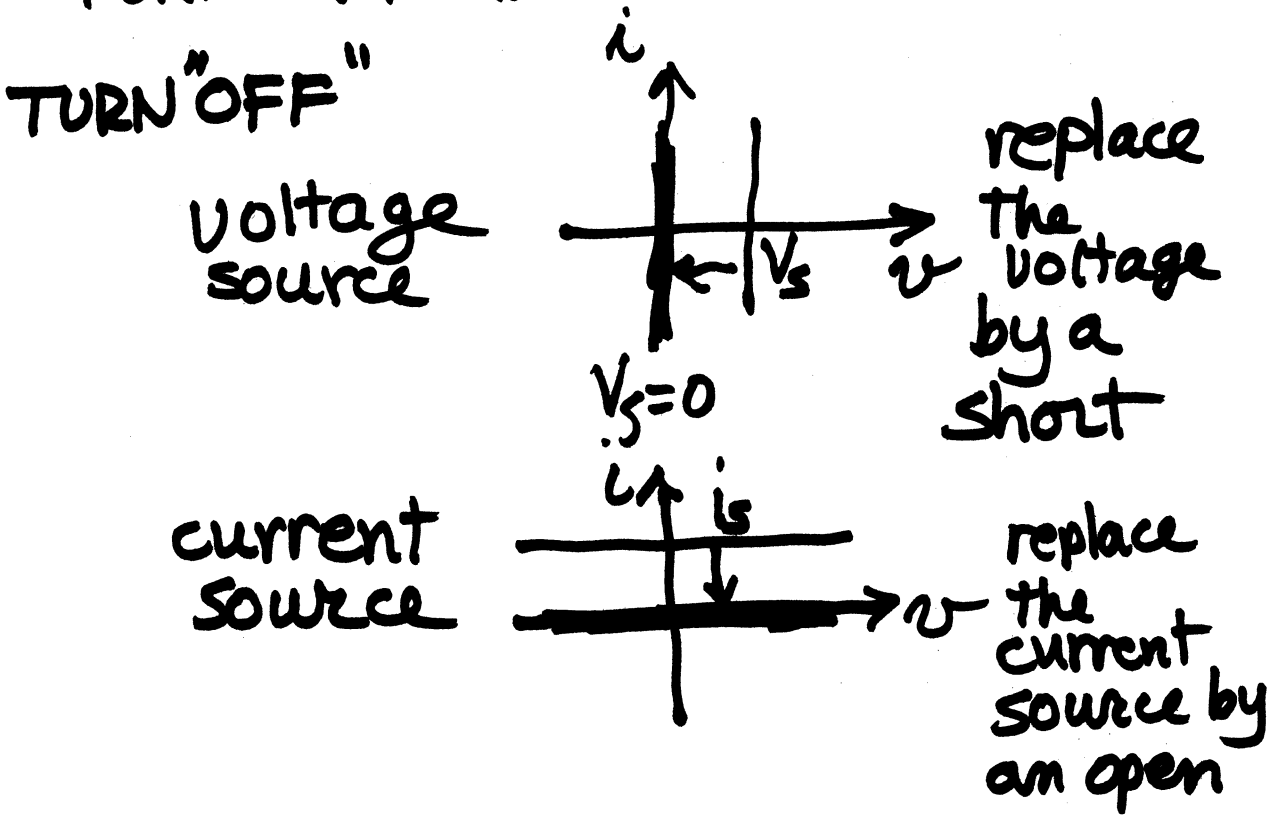
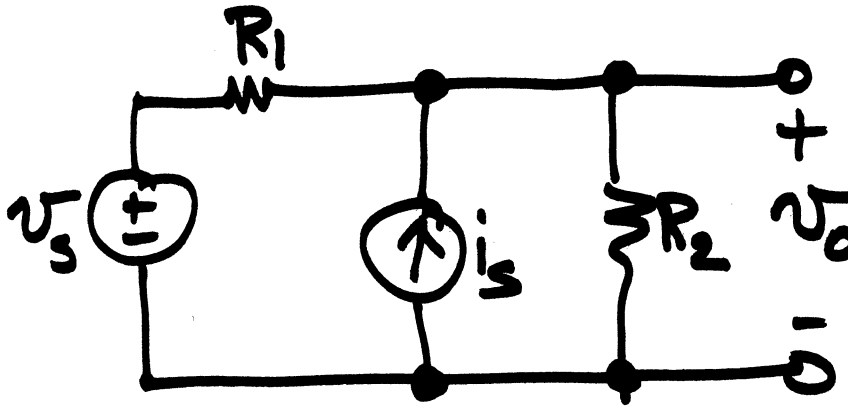
SUPERPOSITION

ANY OUTPUT CAN BE EXPRESSED AS A SUM OF CONTRIBUTIONS FROM EACH SOURCE IN THE CIRCUIT

TURN OFF ALL SOURCES BUT ONE

TURN "OFF"

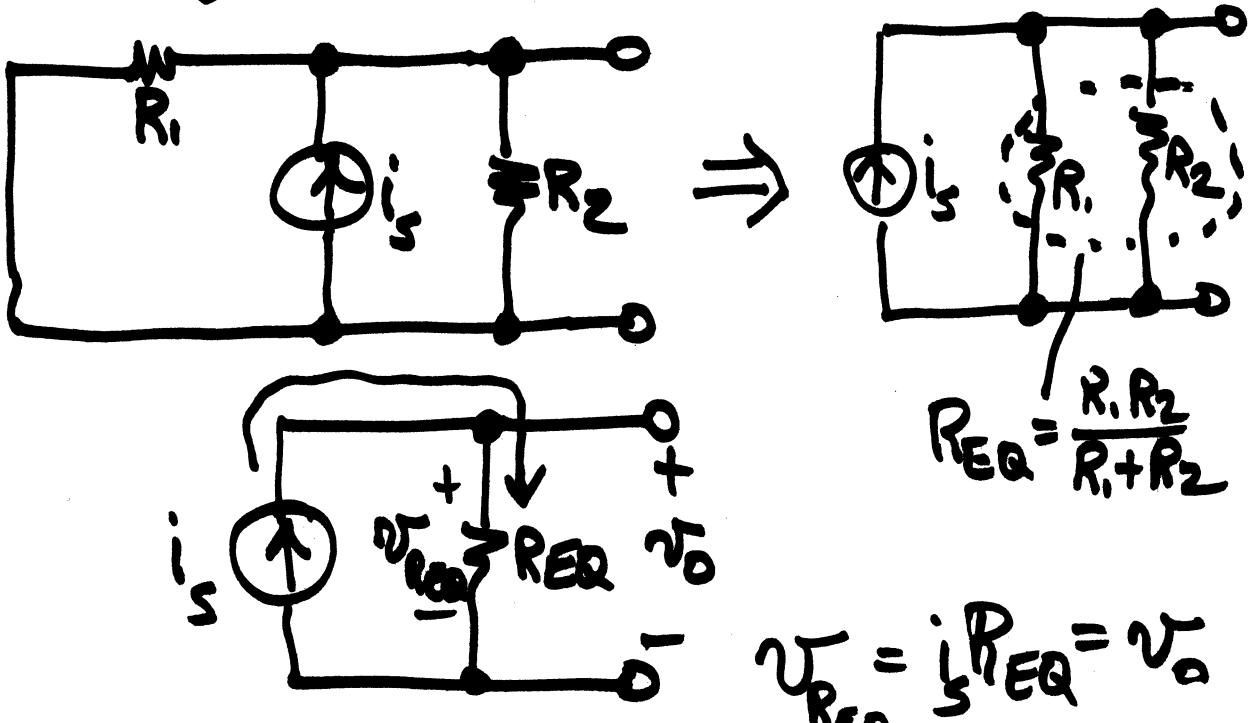




$$v_o = i_s \frac{R_1 R_2}{R_1 + R_2} + \frac{R_2}{R_1 + R_2} v_s$$

superposition

① turn off the voltage source

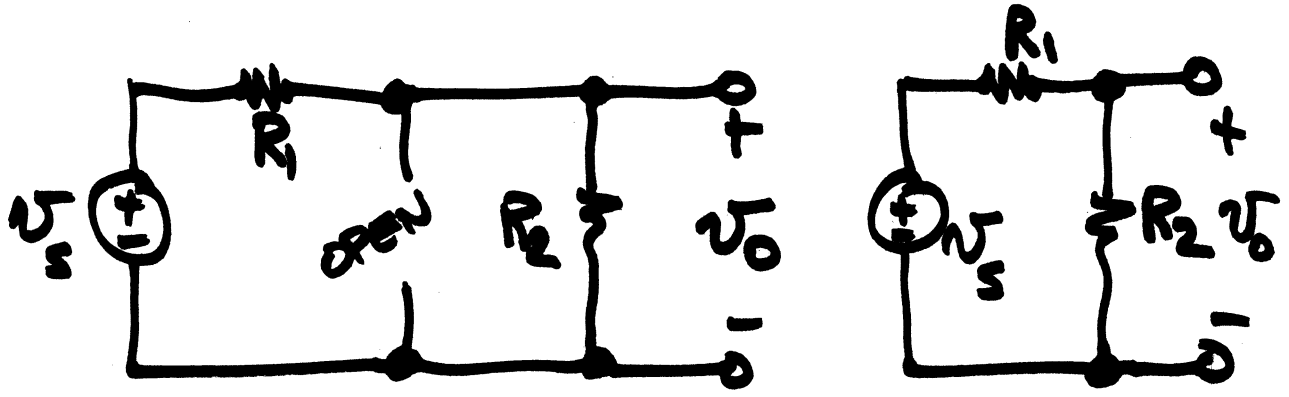


$$R_{EQ} = \frac{R_1 R_2}{R_1 + R_2}$$

$$v_{R_{EQ}} = i_s R_{EQ} = v_o$$

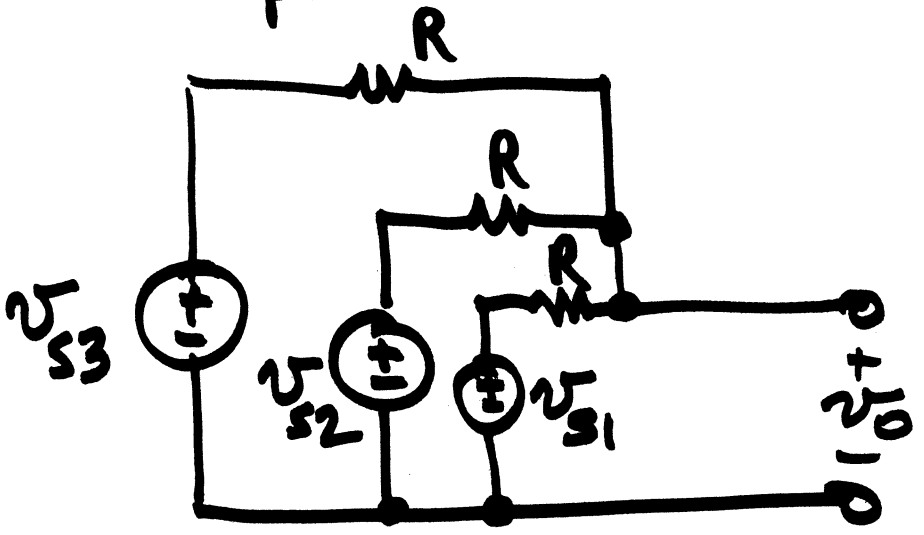
contribution to v_o from the current source $\quad i_s \frac{R_1 R_2}{R_1 + R_2}$

② TURN THE CURRENT SOURCE OFF

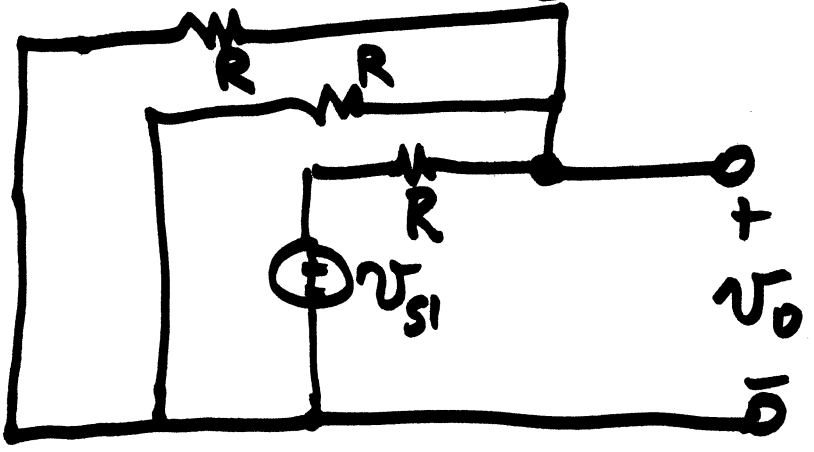


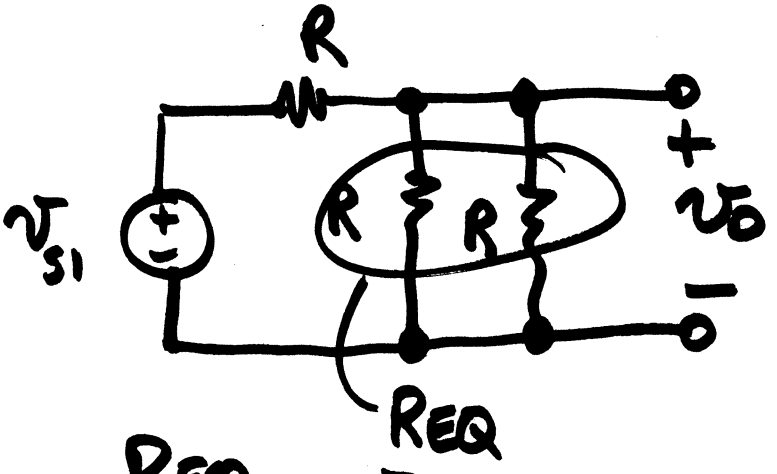
using voltage divider $v_0 = \frac{R_2}{R_1+R_2} v_s$

Example 3-12



TURN OFF v_{s2} & v_{s3}





$$v_o = \frac{R_{EQ}}{R + R_{EQ}} v_{s1}$$