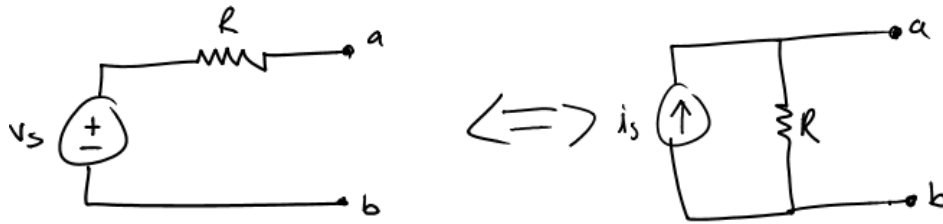
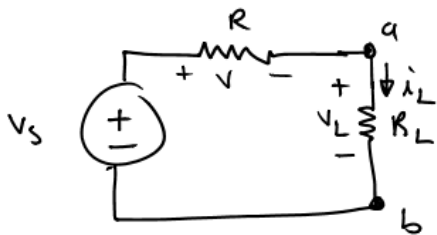


Equivalent Circuits



- The two circuits are equivalent (not equal) in that the voltage across and the current between terminals a and b are the same

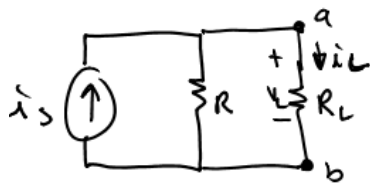
Equation for the Source Transformation



KVL (cw)

$$-v_s + i_L R + i_L (R_L) = 0$$

$$i_L = \frac{v_s}{R + R_L}$$



Current Divider

$$i_L = \frac{R}{R + R_L} i_s$$

$$\frac{v_s}{R + R_L} = \frac{R}{R + R_L} i_s$$

$$v_s = i_s R \quad \text{or} \quad i_s = \frac{v_s}{R}$$

Special Cases

