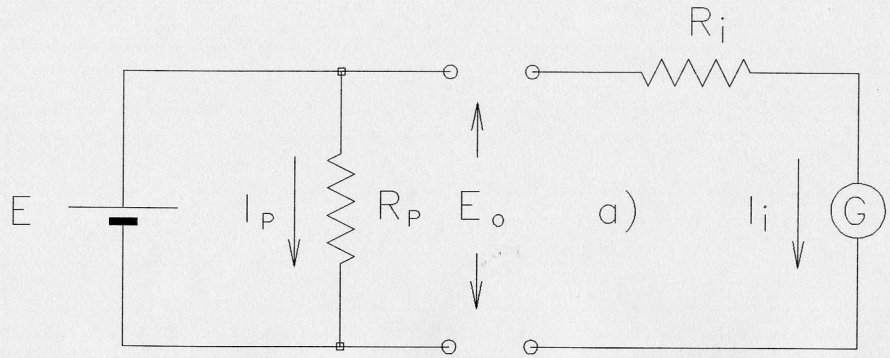
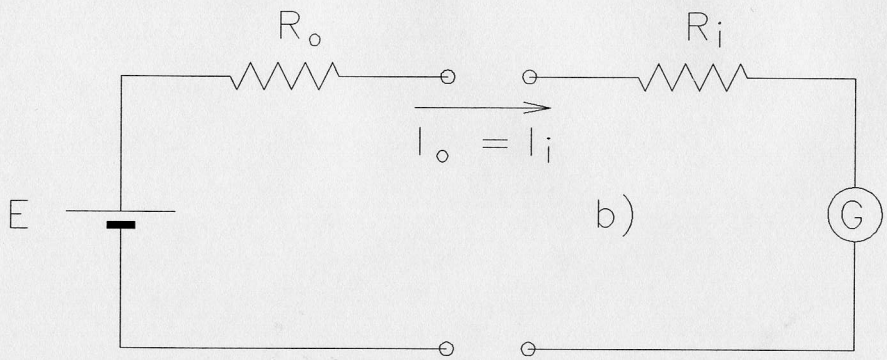


Since E is a "perfect" voltage source it remains constant under any load. Therefore $E = E_o$, the open circuit voltage.



In order that the actual circuit a) be equivalent to the Thévenin equivalent b) the current I_i through the instrument G must be the same in both cases.

a) $I_P = E/R_P = E_o/R_P$, $I_i = E/R_i = E_o/R_i$

b) $I_o = I_i = E/(R_o + R_i) = E_o/(R_o + R_i)$ (26)TEq41g

Since I_i must be the same in both a) and b) we see $R_i = R_i + R_o$ or $R_o = 0$.