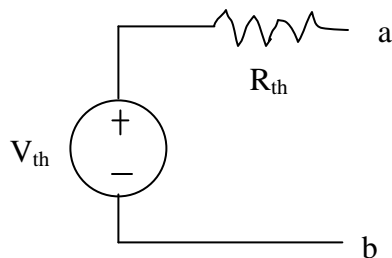
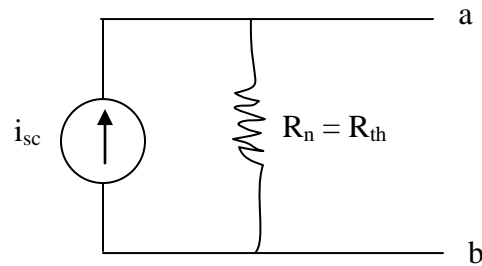


## Methods for Finding a Thévenin Equivalent Circuit



Method	If the circuit contains:	Thévenin Equivalent Circuit
1	Resistors and independent sources	<p>(a) Connect an open circuit between terminals a and b. Find <math>V_{oc} = V_{ab} = V_{th}</math>.</p> <p>(b) Deactivate the independent sources (voltage source = short, current source = open). Find <math>R_{th}</math>.</p>
2	Resistors and independent and dependent sources  or  Resistors and independent sources	<p>(a) Connect an open circuit between terminals a and b. Find <math>V_{oc} = V_{ab} = V_{th}</math>.</p> <p>(b) Connect a short circuit between terminals a and b. Find <math>i_{sc}</math>. <math>R_{th} = V_{oc}/i_{sc}</math>.</p> <p>(c) Connect a 1 amp current source from terminal b to terminal a. Determine <math>V_{ab}</math>. Then <math>R_{th} = V_{ab}/1</math>.</p>
3	Resistors and dependent sources (no independent sources)	<p>(a) Note that <math>V_{oc} = 0</math>.</p> <p>(b) Connect a 1 amp current source from terminal b to terminal a. Determine <math>V_{ab}</math>. Then <math>R_{th} = V_{ab}/1</math>.</p>

## Methods for Finding a Norton Equivalent Circuit



Method	If the circuit contains:	Norton Equivalent Circuit
1	Resistors and independent sources	<p>(a) Connect a short circuit between terminals a and b. Find <math>i_{sc}</math>.</p> <p>(b) Deactivate the independent sources (voltage source = short, current source = open). Find <math>R_n = R_{th}</math>.</p>
2	Resistors and independent and dependent sources  or  Resistors and independent sources	<p>(a) Connect an open circuit between terminals a and b. Find <math>V_{oc} = V_{ab} = V_{th}</math>.</p> <p>(b) Connect a short circuit between terminals a and b. Find <math>i_{sc}</math>. <math>R_n = R_{th} = V_{oc}/i_{sc}</math>.</p> <p>(c) Connect a 1 amp current source from terminal b to terminal a. Determine <math>V_{ab}</math>. Then <math>R_n = R_{th} = V_{ab}/1</math>.</p>
3	Resistors and dependent sources (no independent sources)	<p>(a) Note that <math>i_{sc} = 0</math>.</p> <p>(b) Connect a 1 amp current source from terminal b to terminal a. Determine <math>V_{ab}</math>. Then <math>R_n = R_{th} = V_{ab}/1</math>.</p>