Verification of Norton's Theorem

Procedure:

Allow JavaScript alerts in your browser.
Keep all the resistances (R_1, R_2, R_3 & R_L) close to their respective maximum values. Choose any arbitrary values of V_1 and V_2.

Experiment Part Select:

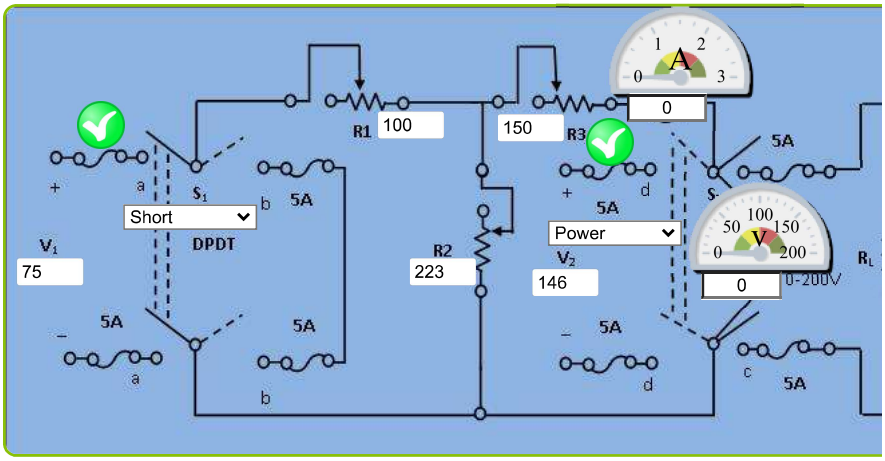
Case 1:
Select switch of S_1 to Power and S_2 to Load and Simulate the program from Case 1 tab. Observe the result of load current.

Case 2:
a)Norton Short circuit current analysis:
Apply switch S_1 to power and S_2 to Short and Simulate the program and read Norton short circuit current (I_{sc}) from Case 2(a) tab.

b)Norton Resistance analysis:
Apply switch S_1 to short and S_2 to power and Simulate the program and read Norton resistance (Rn) from Case 2(b) tab.

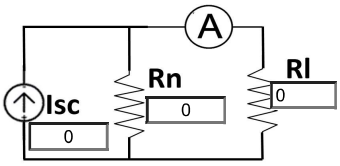
Case 3: Using I_{sc} and R_n determine Load Current
Simulate the program and read Load current (I_L) from Case 3 tab. Compare the load currents (I_L) obtained from Case 1 tab. Then click the button to fill the data to the observation table.

MC-Moving Coil.
DPDT- Double pole Double throw.
N.B.:- All the resistances are in ohms.



Case 1 | Case 2(a) | Case 2(b) | Case 3

Click on simulate to get the Load Current(I_L) from the Thevenin equivalent parameter of the above ckt.



Load Current(I_L) : 0

Simulate

Fill data to the tabl

Observation Table:

Serial no. of Observation	Load Current(I_L) from case 1	Load Voltage(V_L)	Load Resistance (R_L)=V_L/I_L	Norton current(I_{sc}) from case 2(a)	2nd Voltage source(v) from case 2(b)	Ammeter Reading(I) from case 2(b)	Norton Resistance R_n=V/I	Load curren (I_L)=I_{sc}*R_n/(R_n
1st	0.28387	85.161	300	0.67692	110	0.50769	216.67	0.28387
2nd	0.25032	75.096	300	0.59692	125	0.57692	216.67	0.25032
3rd	0.12903	38.709	300	0.30769	146	0.67385	216.67	0.12903
4th	0.096774	29.032	300	0.23077	146	0.67385	216.67	0.096775
5th	0.099761	29.928	300	0.23640	146	0.66654	219.04	0.099763

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