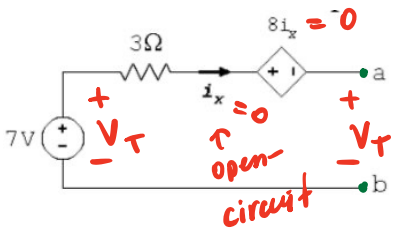
- Example #13: Obtain the available power, P_a for the following circuit

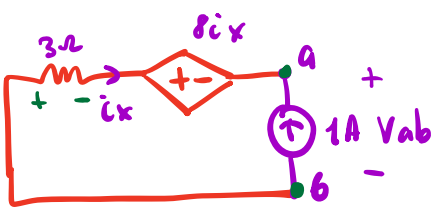


$$P_a = \frac{V_T^2}{4R_T} = \frac{7^2}{4 \cdot 11} = \frac{49}{44} W$$

↑ only get this much if $R_L = R_T = 11\Omega$ ↑ matched load

$V_T = 7V$

For R_T, let's do test signal method:



KVL: $+3i_x + 8i_x + V_{ab} = 0$

$V_{ab} = -11i_x = 11V \Rightarrow R_T = 11\Omega$

$i_x = -1A$

Summary

- Series and parallel resistor configurations
- Voltage and current division
- Sources transformations
- Node-voltage method
  - Supernode
- Loop current method
  - Superloop
- Linearity and superposition
- Thevenin and Norton equivalent circuits
  - Test signal method
- Available power