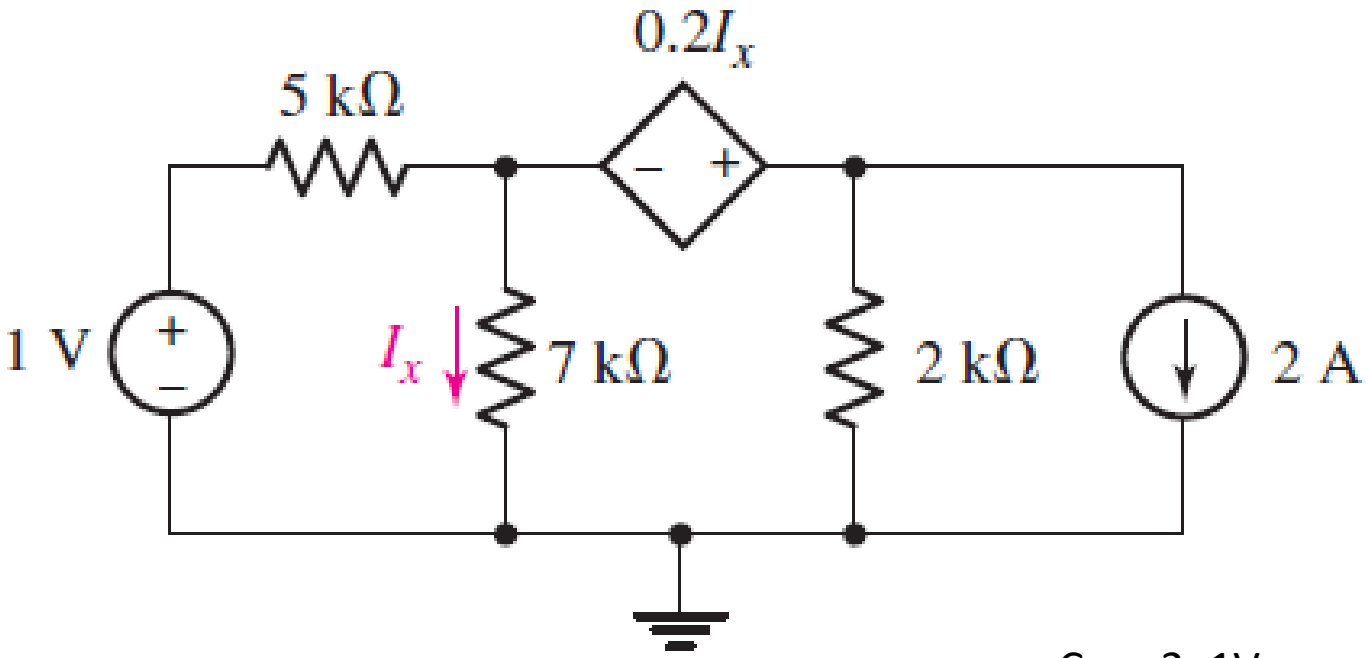
BASIC ELECTRONIC CIRCUITS

Tutorial

- Find I_x using the superposition

Case 1: 1V source is applied, and 2A current is removed

Ix = 33.9 micro Amp.

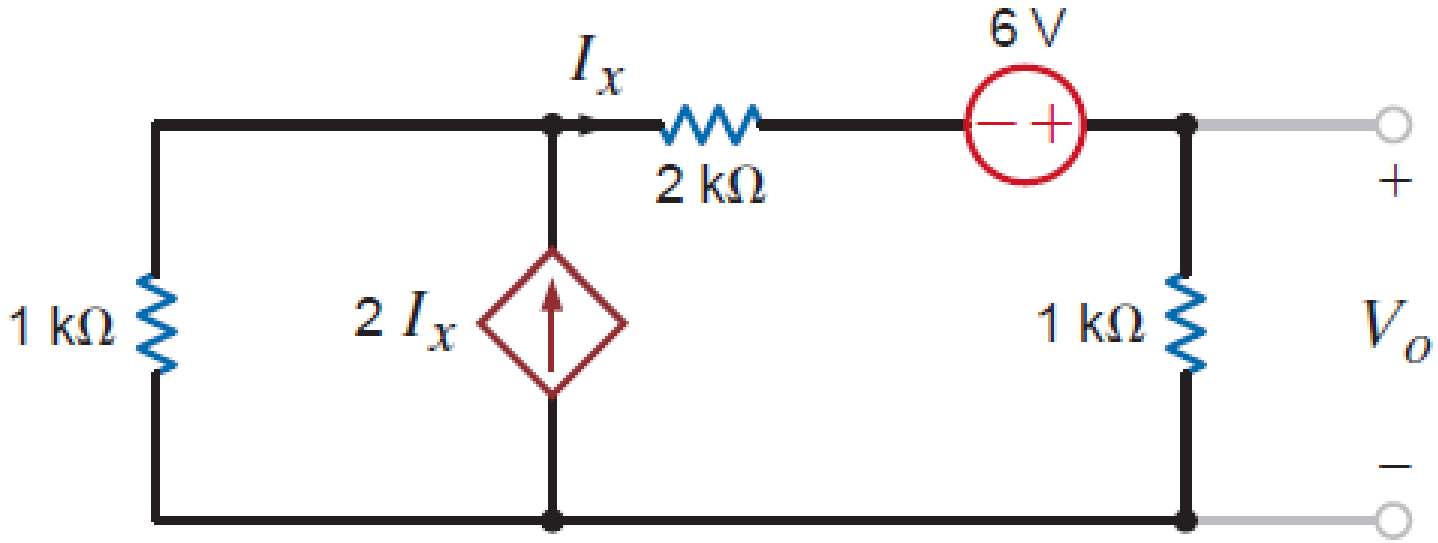


Case 2: 1V source is removed, and 2A current is applied

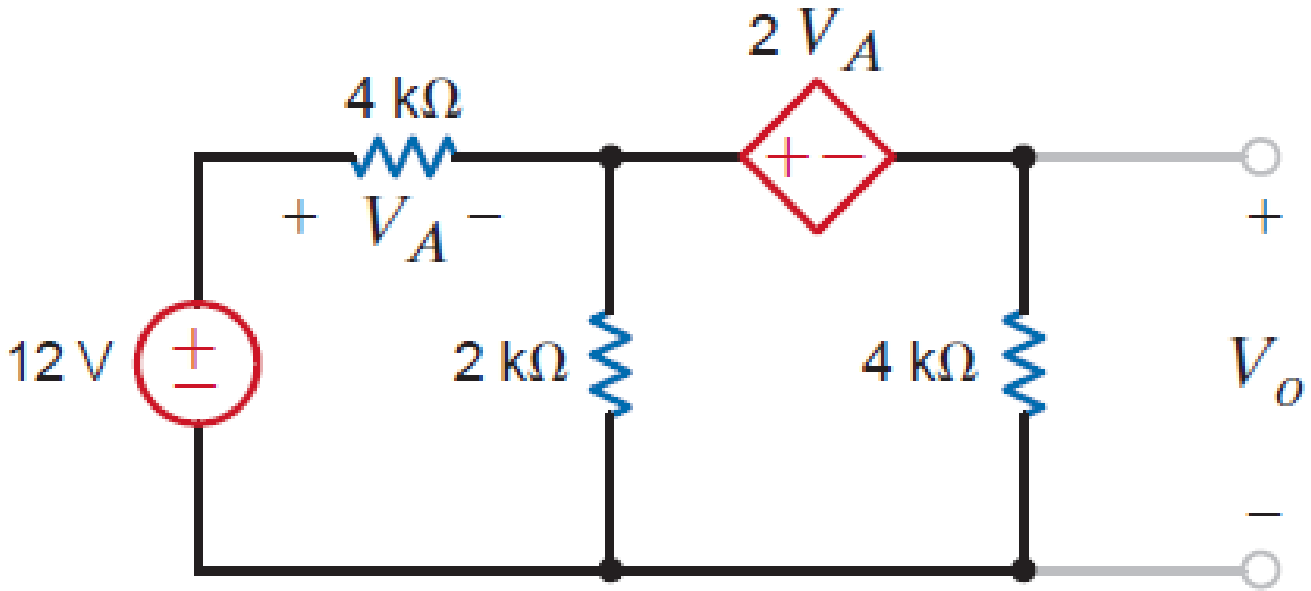
Ix = -0.338 Amp.

Total: Ix = -0.34 Amp.

- Find V_o using the thevenin's theorem.



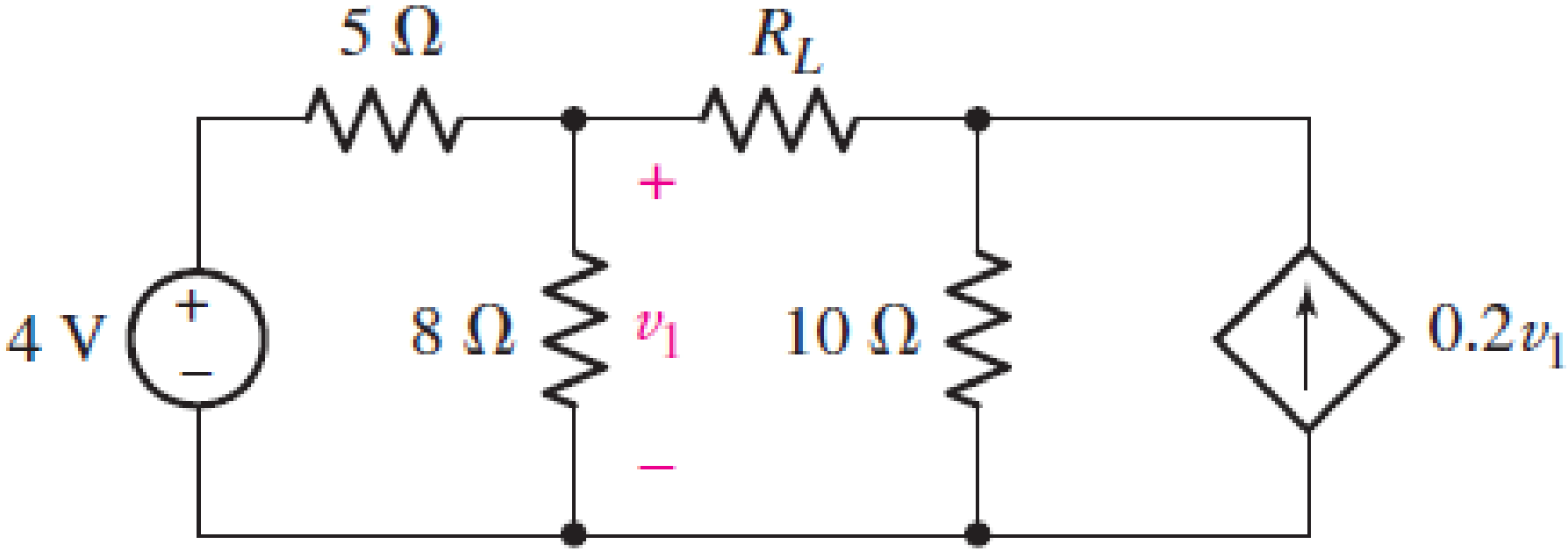
Voc = 6 V, Isc = 6 mA, Rth = 1kΩ, Vo = 3 V



Voc = -12 V, Isc = -3 mA, Rth = 4kΩ, Vo = -6 V

- Determine the value for R_L, for the case of max power to be delivered to load:

Voc = -2.46 V, Isc = -0.356 A, Rth = 6.9Ω, Pmax = 0.22 W



- Find the value of R_L for maximum power transfer and maximum power that can be transferred to R_L.

Voc = 68 V, Isc = 2.43 A, Rth = 28Ω, Pmax = 41.3 W