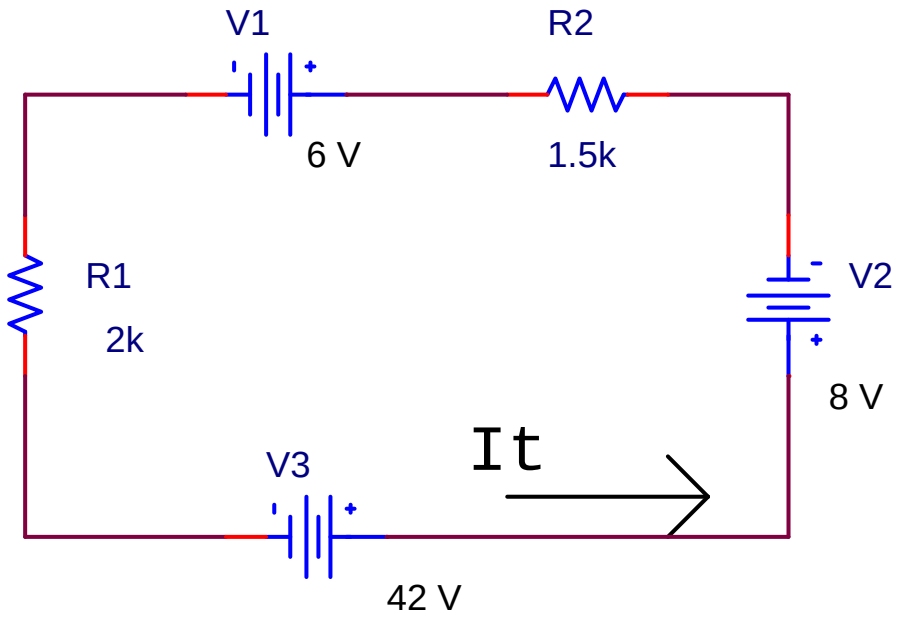
Breakout #1 – Using the same circuit

- Questions
  - Was source V_1 delivering or absorbing power? How much?
  - What about source V_2?
  - What about source V_3?



Absorbed:

$$P_{V1} = 6\,\text{V} \cdot 8\,\text{mA} = 48\,\text{mW}$$

$$P_{V2} = 8\,\text{V} \cdot 8\,\text{mA} = 64\,\text{mW}$$

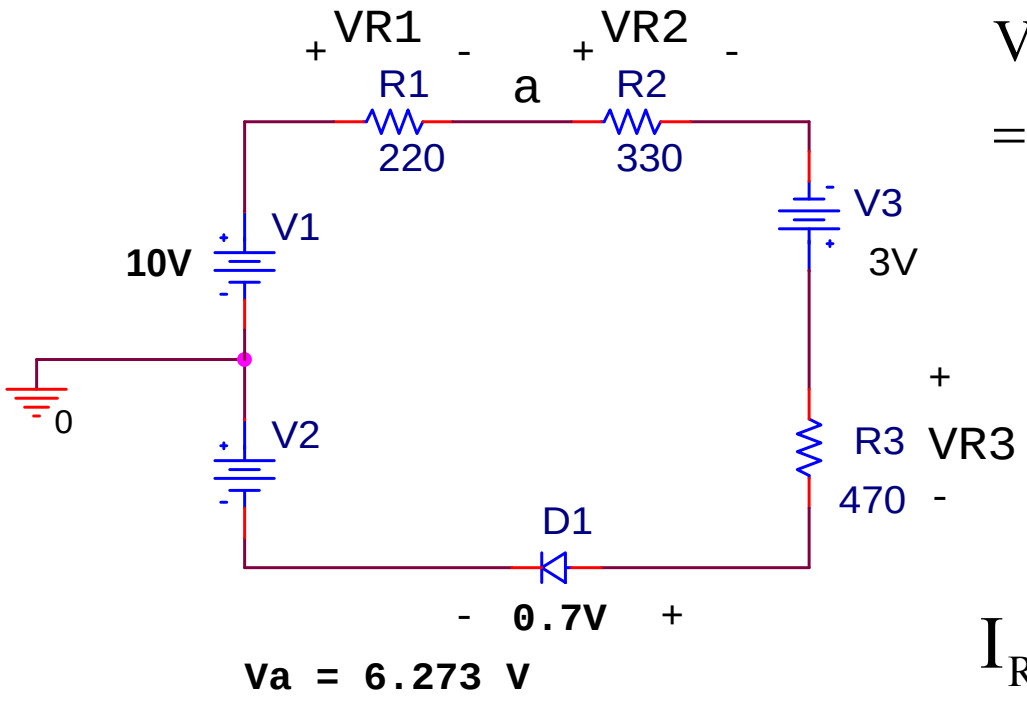
Delivered:

$$P_{V3} = 42\,\text{V} \cdot 8\,\text{mA} = 336\,\text{mW}$$

NP

Breakout #2

- Find **VR1** and V2



$$KVL:$$

$$V_1 - V_{R1} - Va = 0$$

$$V_{R1} = V_1 - Va = 10V - 6.273V$$

$$= 3.727V$$

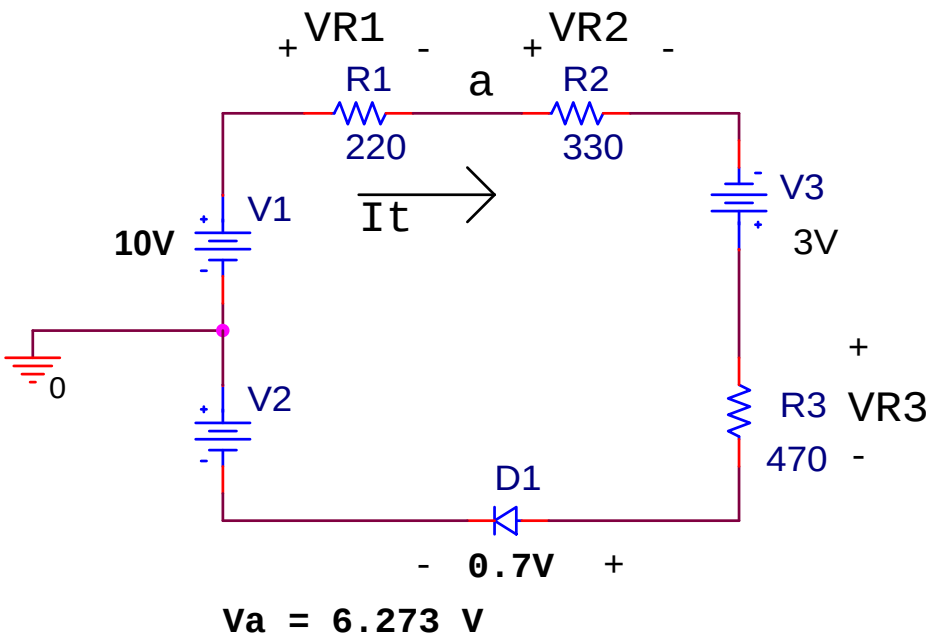
$$I_{R1} = \frac{V_{R1}}{R_1} = 16.941mA$$

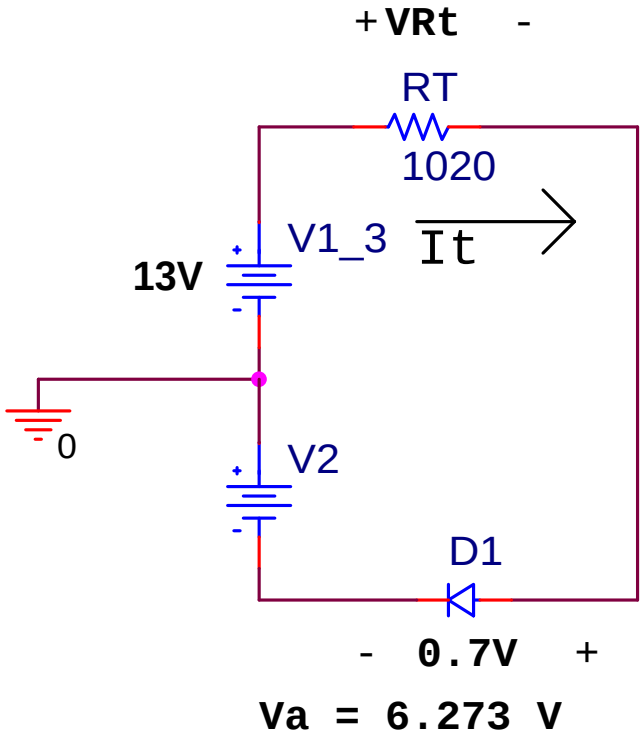
Left to right

NP

Breakout #2

- Find V_{R1} and $\mathbf{V_2}$
  - Simplify the circuit
  - Use IT to find V_{RT} and then KVL for V2

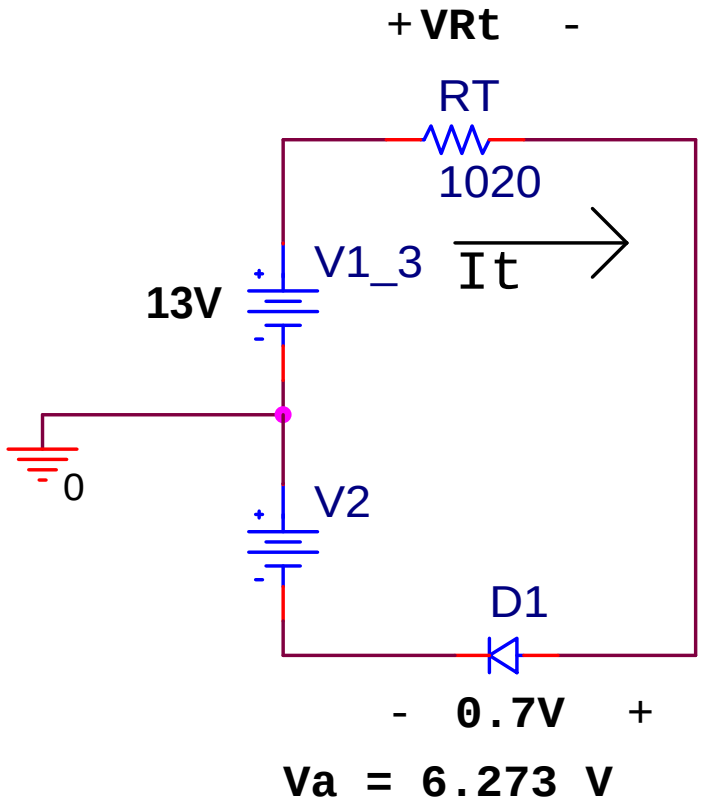




NP

Breakout #2

- Find V_{R1} and **V_2**
  - Use I_T to find V_{RT} and then KVL for V_2



$$V_{RT} = I_T \cdot R_T = 17.28\text{V}$$

$$\text{KVL}:$$

$$+13\text{V} - 17.28\text{V} - 0.7\text{V} + V_2 = 0$$

$$V2 = 17.28\text{V} + 0.7\text{V} - 13\text{V}$$

$$= 4.98\text{V}$$

NP