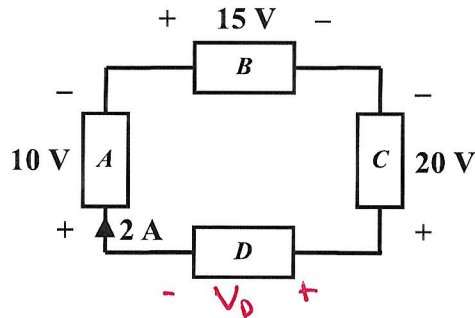


EE 2240
Homework Problem #008

For the circuit shown below:



- a. Does component *A* **absorb** power or **deliver** power? How do you know?

Satisfies the P.S.C. \Rightarrow absorbs power

$$P = (10V)(2A) = 20W$$

- b. Does component *B* **absorb** power or **deliver** power? How do you know?

Satisfies the P.S.C. \Rightarrow absorbs power

$$P = (15V)(2A) = 30W$$

- c. Does component *C* **absorb** power or **deliver** power? How do you know?

Does not satisfy the P.S.C. \Rightarrow delivers power

$$P = (20V)(2A) = 40W$$

- d. Does component *D* **absorb** power or **deliver** power? How do you know?

$$V_D = 20 - 15 - 10 = -5V$$

\Rightarrow Does not satisfy the P.S.C. \Rightarrow delivers power

$$P = (5V)(2A) = 10W$$

- e. Show that power is conserved.

$$20W + 30W = 50W \text{ absorbed}$$

$$40W + 10W = 50W \text{ delivered}$$