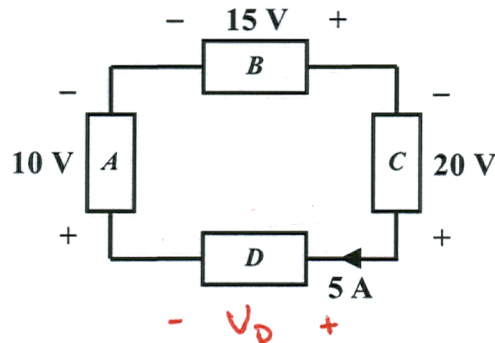


EE 2240
Homework Problem #04

For the circuit shown below:



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

Component *A* absorbs power. Its voltage and current satisfy the P.S.C. $P_A = (10V)(5A) = 50W$

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

Component *B* delivers power. Its voltage and current do not satisfy the P.S.C. $P_B = (15V)(5A) = 75W$

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

Component *C* delivers power. Its voltage and power do not satisfy the P.S.C. $P_C = (20V)(5A) = 100W$

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

$$V_D = 20 + 15 - 10 = 25V.$$

Component *D* absorbs power. Its voltage and power satisfy the P.S.C. $P_D = (25V)(5A) = 125W$

- e. Show that power is conserved.

$$P_A - P_B - P_C + P_D = 50 - 75 - 100 + 125$$

$$= 0$$

\therefore power is conserved.