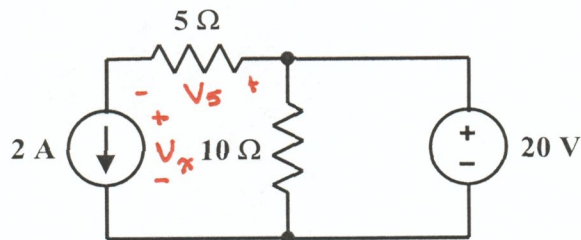


EE 2240
Problem #10

Given the circuit shown below:



- a. How much power does the 5Ω resistor absorb?

$$P_{5\Omega} = (2A)^2 (5\Omega) = 20W$$

- b. How much power does the 10Ω resistor absorb?

$$P_{10\Omega} = \frac{(20V)^2}{10\Omega} = 40W$$

- c. Does the independent current source deliver power or absorb power? How much?

$$V_5 = (5\Omega)(2A) = 10V$$

$$V_x = -V_5 + 20V = -10V + 20V = 10V$$

$$\therefore \text{The independent current source absorbs: } (10V)(2A) = 20W$$

- d. Does the independent voltage source deliver power or absorb power? How much?

Since all of the other components absorb power,
the independent voltage source must be
delivering $20W + 40W + 20W = 80W$