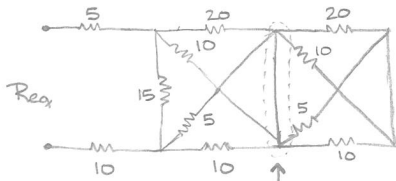
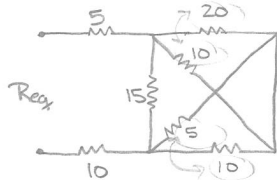


(6pts) Problem 2

Determine R_{eq} in the circuit below (show transformations)

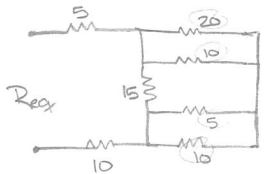


Note: Current will flow through this wire and not through the right-most section of the circuit.
(See below for simplified circuit)



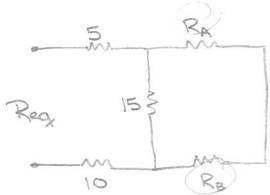
Note: 20 and 10 Ω are in parallel

Note: 5 and 10 Ω are in parallel

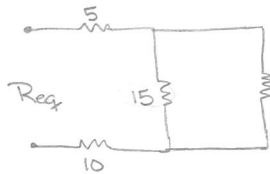


$$R_A = \frac{(R_1 * R_2)}{(R_1 + R_2)} = \frac{200}{30}$$

$$R_B = \frac{(R_1 * R_2)}{(R_1 + R_2)} = \frac{50}{15}$$



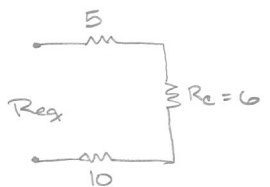
Note: R_A and R_B are in series



$$R_A + R_B = \frac{200}{30} + \frac{50}{15} = 10$$

Note: $(R_A + R_B) = 10$ is in parallel with 15 Ω

$$R_C = \frac{(R_1 * R_2)}{(R_1 + R_2)} = \frac{150}{25} = 6$$



Note: All three resistors are in series

$$5 + 6 + 10 = 21$$

$$R_{eq} = 21 \Omega$$