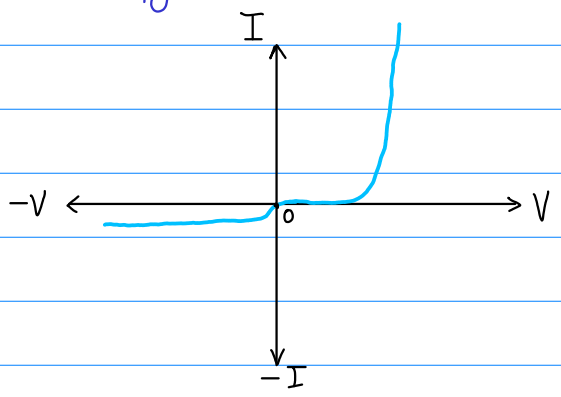
Name: _____ ID: _____

Assignment – 01

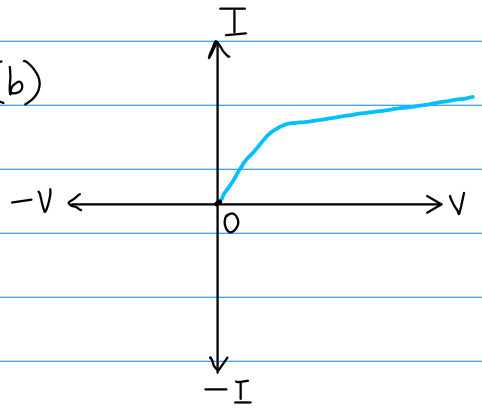
(Submission due : 22 Sep 2023)

Q 1. The current-voltage characteristics of a circuit element is given below. Identify whether it is Active or Passive element.

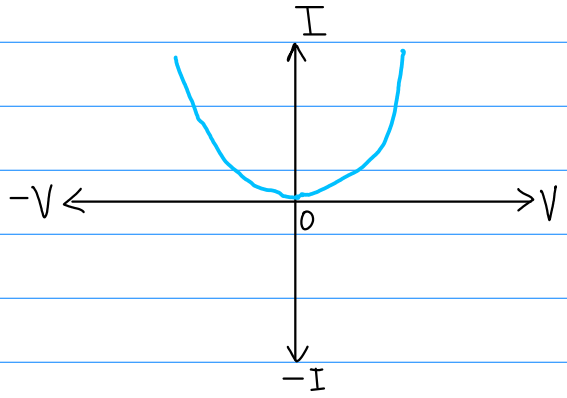
(a)



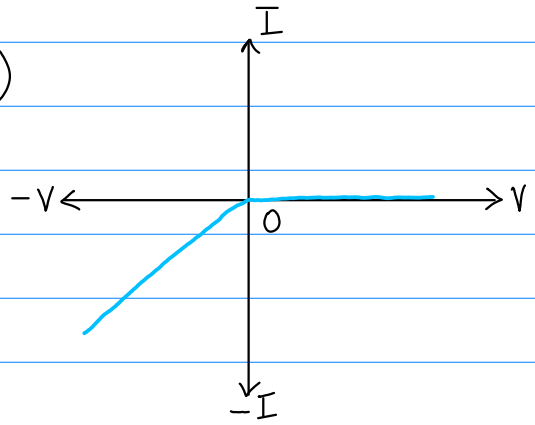
(b)



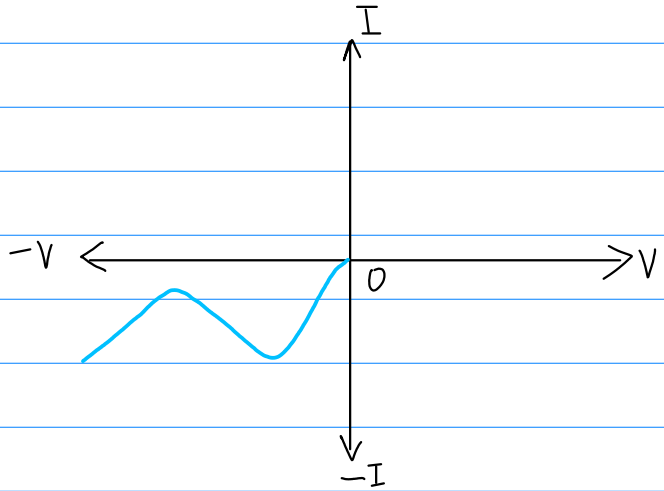
(c)



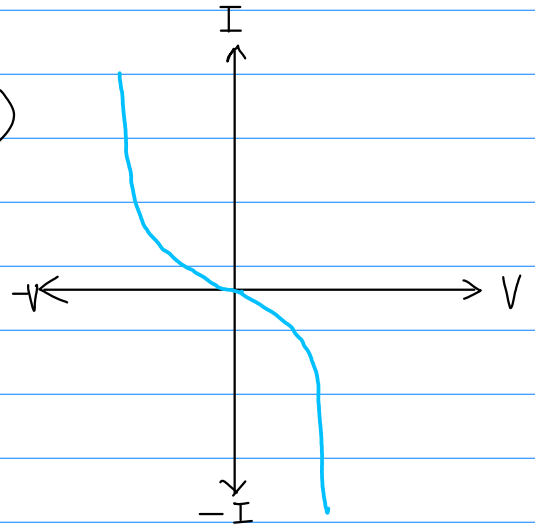
(d)



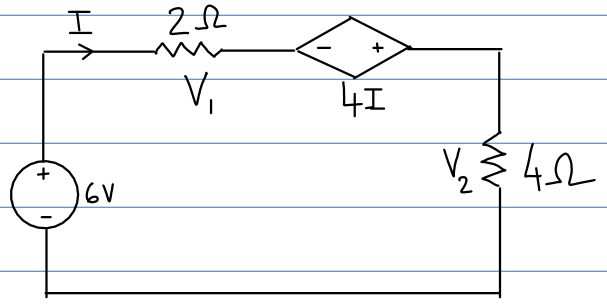
(e)



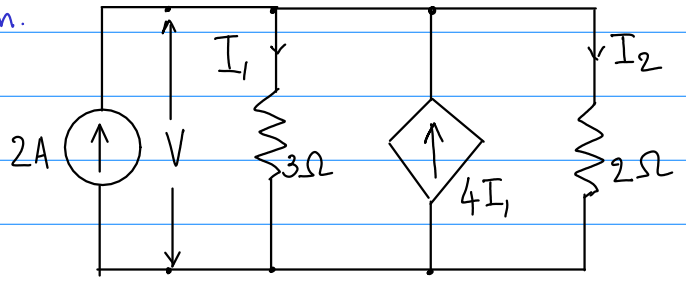
(f)



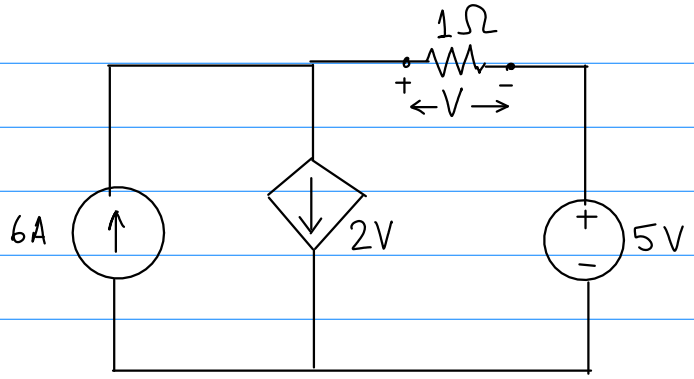
Q2. Apply Kirchoff's voltage law (KVL) to find the values of current I and voltage drops V_1 and V_2 in the ckt. below.



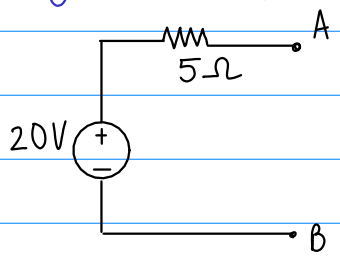
Q3. Apply Kirchoff's current law (KCL) to find the values of current I_1 and I_2 in the ckt. below. Comment on the direction of current shown.



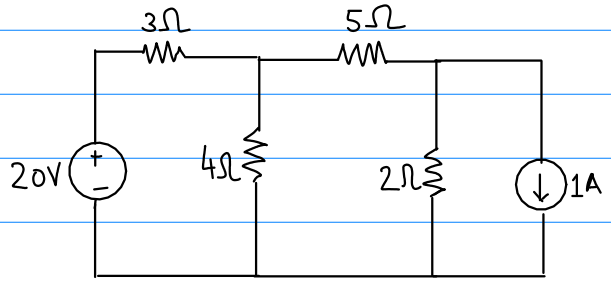
Q4. Apply KCL to find the value of V in the ckt. shown below



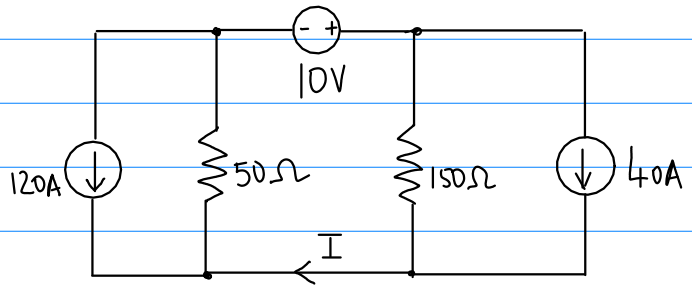
Q5. Convert a given voltage source into equivalent current source.



Q6. Calculate the direction and magnitude of current flowing through 5Ω resistor. [Hint: You may convert one source to other.]



Q7. Use superposition theorem to determine the current I shown in the ckt. below.



Q8. Calculate the total power delivered to the 10Ω resistor in the ckt. Use superposition theorem.