EE 201 – CIRCUIT THEORY I

Homework #1

(Due:27.10.2026 in class)

1. For the circuit in Fig. 1;

a) Is the interconnection of ideal sources valid? Explain.

b) Identify which sources are developing (supplying) power and which sources are absorbing power?

c) Verify that the total power developed in the circuit equals the total power absorbed?

d) Repeat (a)-(c), reversing the polarity of the 10 V source.

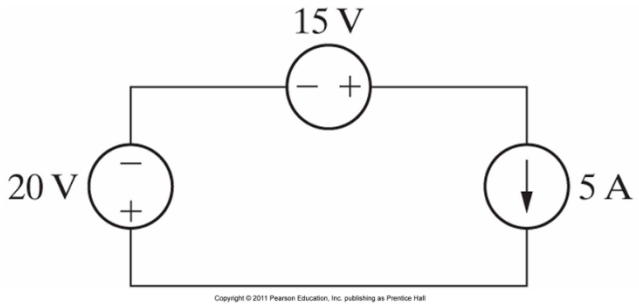


Fig. 1 Circuit of question 1

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2. Find the total power developed in the circuit in Fig. 2 if $v_0 = 100\ V$ and $i_g = 12\ A$.

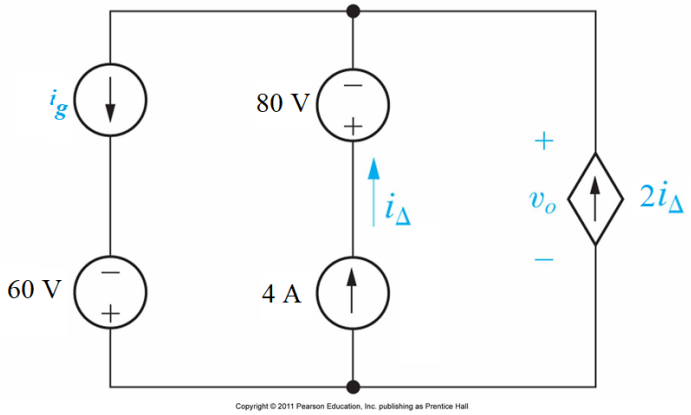


Fig. 2 Circuit of question 2

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3. For the circuit in Fig. 3;

a) find the currents i_1 & i_2 .

b) find the voltage v_0.

c) Verify that the total power developed equals the total power dissipated?

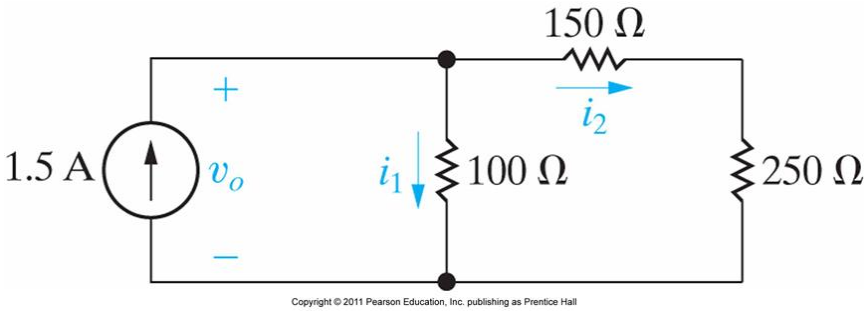


Fig. 3 Circuit of question 3

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4. Given the circuit shown in Fig. 4, find

a) i_a , i_b & v_0 ,

b) the power dissipated in each resistor,

c) the power delivered by the 50 V source.

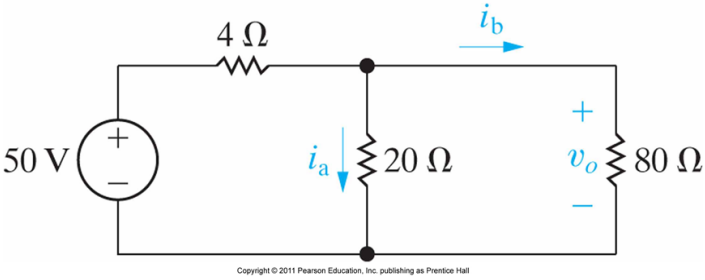
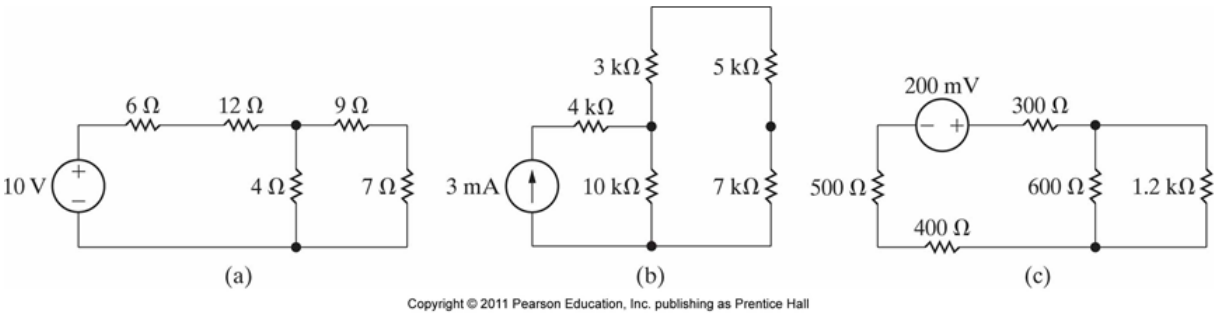


Fig. 4 Circuit of question 4

5. For each of the circuits shown in Fig. 5, simplify the circuit by replacing the series-connected and/or parallel-connected resistors with equivalent resistors.

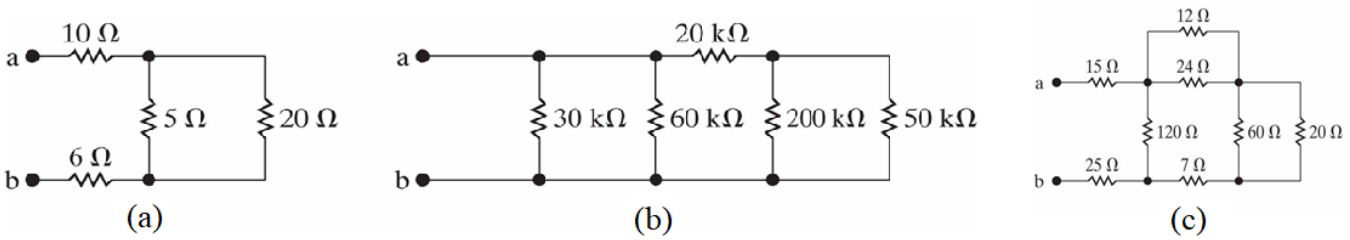


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Fig. 5 Circuits of question 5

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6. Find the equivalent resistances R_{ab} for each of the circuits in Fig.6.



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Fig. 6 Circuits of question 6