Important Remarks

- Homework is due on February 27 at the beginning of class.

1. Problem 3.20
2. Problem 3.26
3. Problem 3.34
4. Problem 3.35

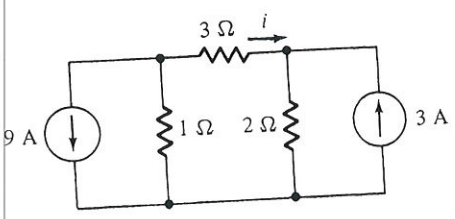

Fig. P3.19

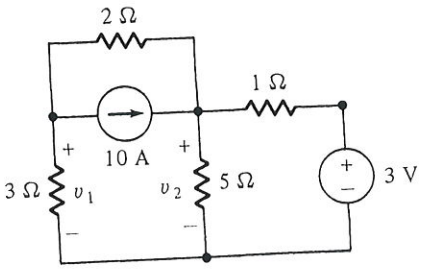

Fig. P3.20

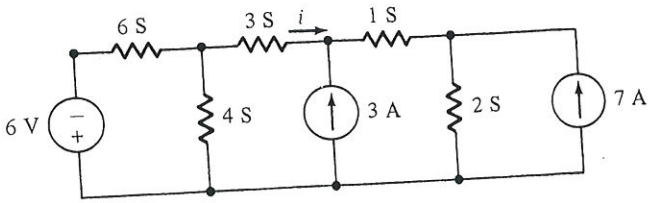

Fig. P3.21

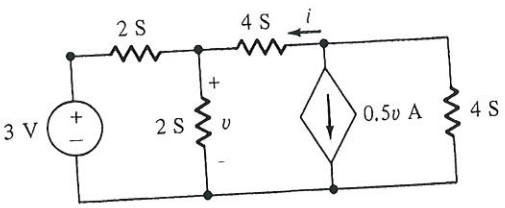

Fig. P3.22

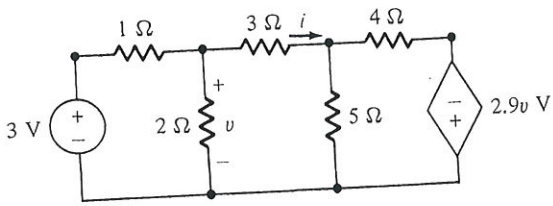

Fig. P3.23

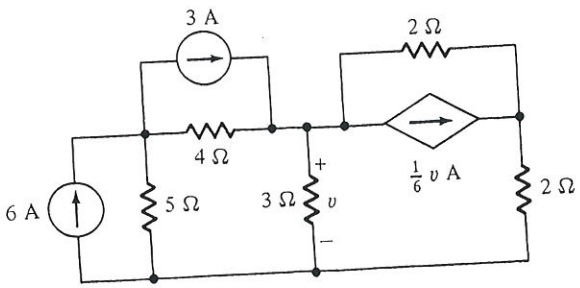

Fig. P3.24

3.20 For the circuit shown in Fig. P3.20, use source transformations to determine v_1 and v_2.

3.21 Repeat Problem 3.18 for the circuit shown in Fig. P3.21.

3.22 For the circuit shown in Fig. P3.22, use source transformations to determine i and v.

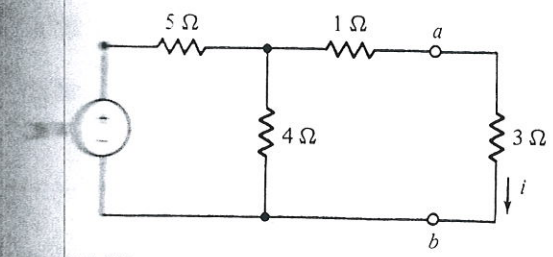

Fig. P3.25

3.23 Repeat Problem 3.22 for the circuit shown in Fig. P3.23.

3.24 For the circuit shown in Fig. 3.24, use source transformations to determine v.

3.25 Given the circuit shown in Fig. P3.25:

(a) Find the Thévenin equivalent of the circuit to the left of terminals a and b.

(b) Use the result of part (a) to find i.

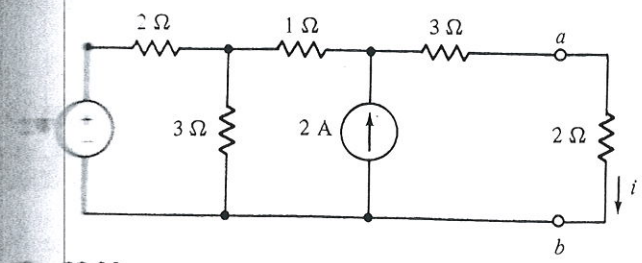

Fig. P3.26

3.26 Repeat Problem 3.25 for the circuit given in Fig. P3.26.

3.27 Repeat Problem 3.25 for the circuit shown in Fig. P3.27.

3.28 Repeat Problem 3.25 for the circuit shown in Fig. P3.28.

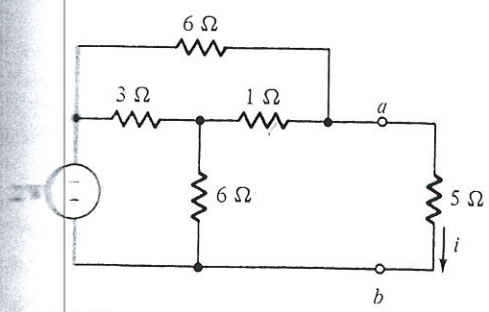

Fig. P3.27

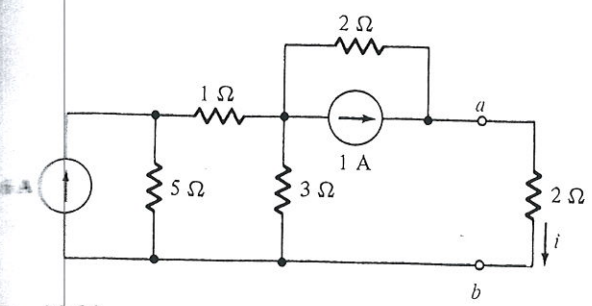

Fig. P3.28

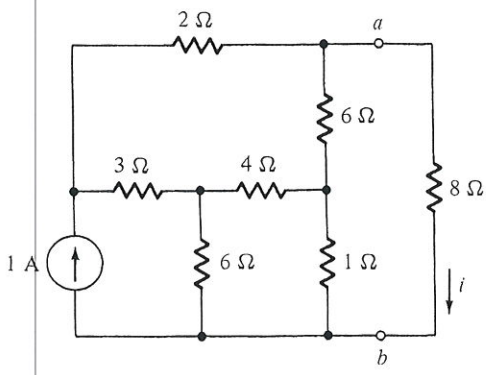

Fig. P3.29

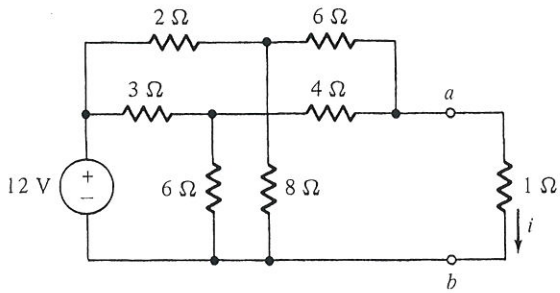

Fig. P3.30

3.29 Repeat Problem 3.25 for the circuit shown in Fig. P3.29.

3.30 Repeat Problem 3.25 for the circuit shown in Fig. P3.30.

3.31 Find the Thévenin equivalent of the circuit shown in Fig. P3.31.

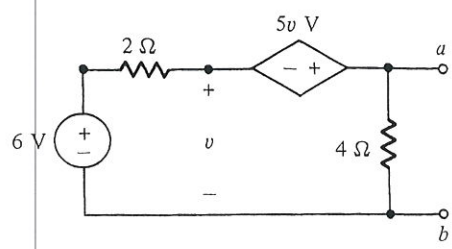

Fig. P3.31

3.32 Find the Thévenin equivalent of the circuit shown in Fig. P3.32.

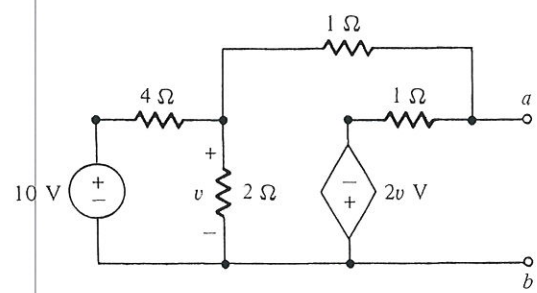

Fig. P3.32

3.33 For the circuit given in Fig. 3.35 (p. 126), change the 2-Ω resistor to a 1-Ω resistor. Find the Thévenin equivalent of the resulting circuit.

3.34 Find the Thévenin equivalent of the circuit shown in Fig. P3.34.

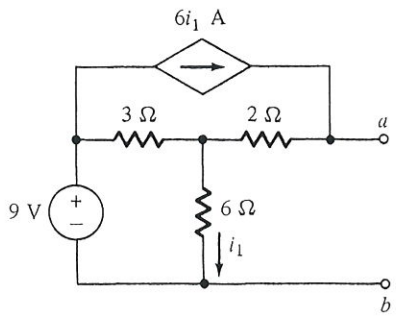

Fig. P3.34

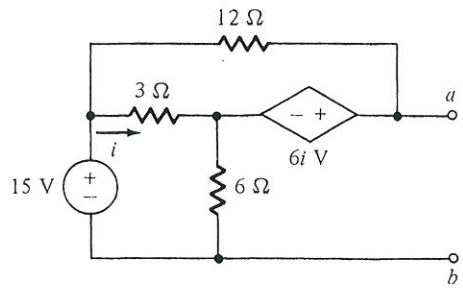

Fig. P3.35

3.35 Find the Thévenin equivalent of the circuit shown in Fig. P3.35.

3.36 Find the Thévenin equivalent of the circuit shown in Fig. P3.36. (*Hint:* Use a current source i_o to determine R_o.)

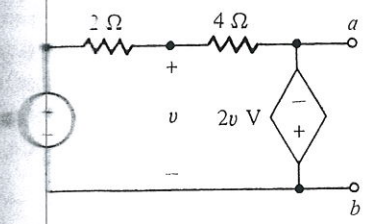

Fig. P3.36

3.37 Repeat Problem 3.36 for the circuit shown in Fig. P3.37.

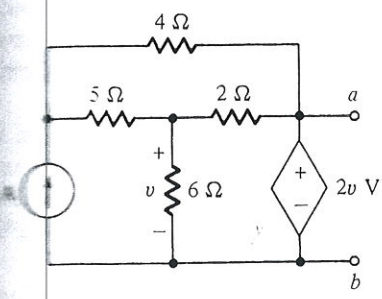

Fig. P3.37

3.38 Find the Thévenin equivalent of the op-amp circuit shown in Fig. P3.38.

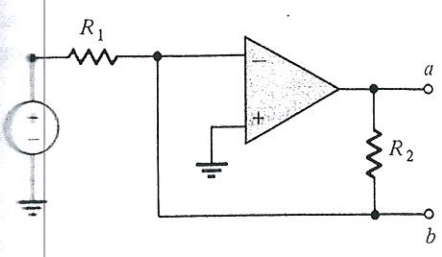

Fig. P3.38

3.39 Find the Thévenin equivalent of the op-amp circuit shown in Fig. P3.39.

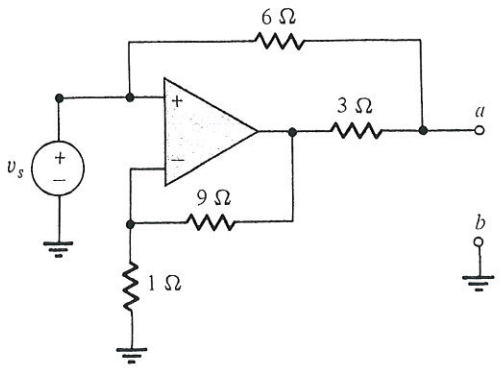

Fig. P3.39

3.40 For the circuit shown in Fig. 3.25 (p. 122), $v_{oc} = 9$ V. If the voltage across the load is 4 V when $R_L = 2\ \Omega$, find the output resistance R_o of the circuit.

3.41 For the circuit shown in Fig. 3.25 (p. 122), when $R_L = 1\ \Omega$ the voltage across R_L is 4 V, and when $R_L = 4\ \Omega$ the voltage across it is 8 V. Find the voltage across R_L when $R_L = 3\ \Omega$.

3.42 For the circuit given in Fig. P3.25, (a) find the Norton equivalent of the circuit to the left of terminals a and b and (b) use the Norton-equivalent circuit to determine i.

3.43 Repeat Problem 3.42 for the circuit shown in Fig. P3.26.

3.44 Repeat Problem 3.42 for the circuit shown in Fig. P3.27.

3.45 Repeat Problem 3.42 for the circuit shown in Fig. P3.28.

3.46 Repeat Problem 3.42 for the circuit shown in Fig. P3.29.

3.47 Repeat Problem 3.42 for the circuit shown in Fig. P3.30.

3.48 Find the Norton equivalent of the circuit shown in Fig. P3.31.

3.49 Find the Norton equivalent of the circuit shown in Fig. P3.32.

3.50 Find the Norton equivalent of the circuit shown in Fig. P3.34.

3.51 Find the Norton equivalent of the circuit shown in Fig. P3.35.