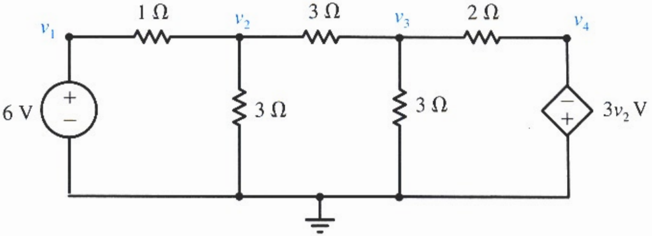

Fig. P2.7

2.10 Find the node voltages for the circuit shown in Fig. P2.10.

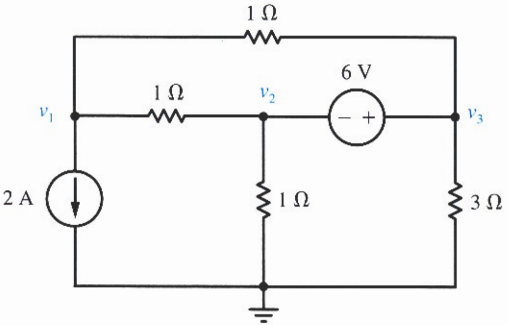

Fig. P2.10

2.12 Fi
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analysis to
amplifier i

$$\frac{v_2}{v_1} =$$

2.13 Fi
circuit wh
hybrid- or
is a resista
given in P
tance v_1/v

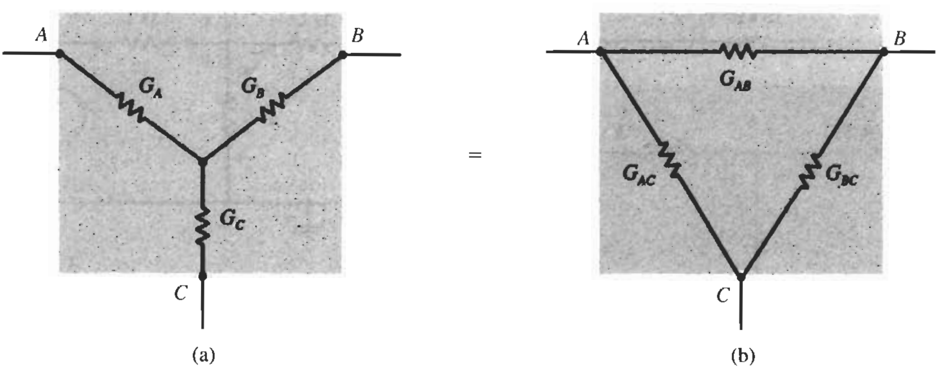

Fig. P2.17 *a,b*

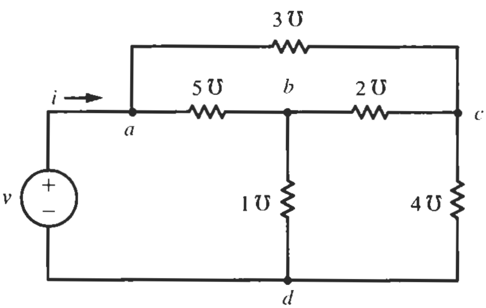

Fig. P2.17 *c*

$$R_A = \frac{R_{AB}R_{AC}}{R_{AB} + R_{AC} + R_{BC}} \quad R_B = \frac{R_{AB}R_{BC}}{R_{AB} + R_{AC} + R_{BC}}$$

$$R_C = \frac{R_{AC}R_{BC}}{R_{AB} + R_{AC} + R_{BC}}$$

where $R = 1/G$. Such a process is called a **Δ-Y (delta-wye) transformation.**

The circuit shown in Fig. P2.18 is identical to the circuit given in Fig. P2.16. Use a Δ-Y transformation on the 2-℧, 3-℧, and 5-℧ conductances, and then combine elements in series and parallel to determine $G = i/v$.

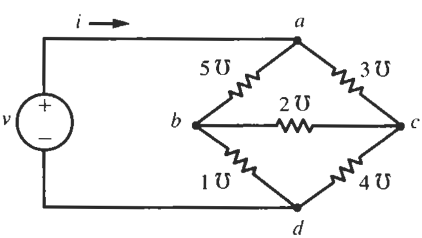

Fig. P2.18

2.19 Find the mesh currents for the circuit shown in Fig. P2.19.

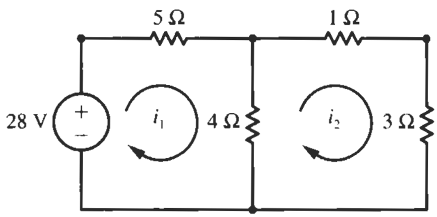

Fig. P2.19

2.20 Assume clockwise mesh currents for the circuit shown in Fig. 2.9 on p. 64. Use mesh analysis to find these mesh currents.

2.21 Assume clockwise mesh currents for the circuit shown in Fig. P2.7. Use mesh analysis to find these mesh currents.

2.22 Assume clockwise mesh currents for the circuit shown in Fig. P2.9. Use mesh analysis to find these mesh currents.

2.23 Assume clockwise mesh currents for the circuit shown in Fig. P2.10. Use mesh analysis to find these mesh currents.

2.24 Use mesh analysis to find the conductance $G = i/v$ for the circuit given in Fig. P2.18.

2.25 Assume clockwise mesh currents for the circuit shown in Fig. P2.8. Use mesh analysis to find these mesh currents.

2.26 Assume clockwise mesh currents for the circuit shown in Fig. P2.26 (below). Use mesh analysis to find these mesh currents.

2.27 For the circuit shown in Fig. P2.27, find v_o when the ideal amplifier (a) is an op amp, and (b) has finite gain A.

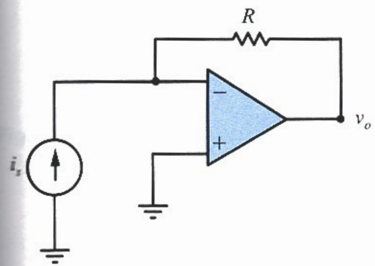

Fig. P2.27

2.28 For the op-amp circuit shown in Fig. P2.28, find (a) v_o, and (b) i_o.

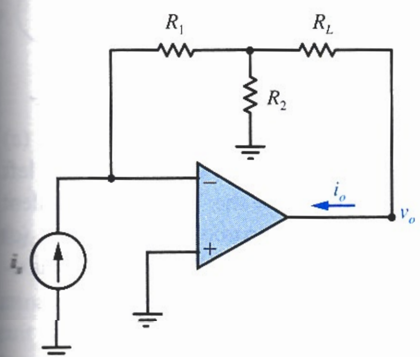

Fig. P2.28

2.29 For the op-amp circuit shown in Fig. P2.29, find (a) v_o, and (b) i_o.

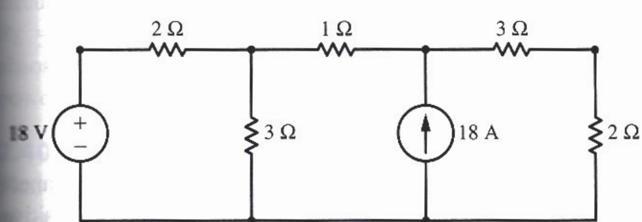

Fig. P2.26

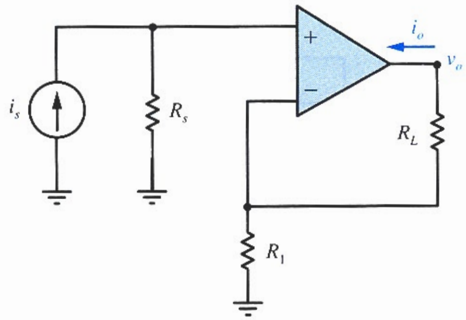

Fig. P2.29

2.30 The op-amp circuit shown in Fig. P2.30 is known as a **negative-impedance converter.** For this circuit, find (a) v_o, and (b) the resistance v_s/i_s.

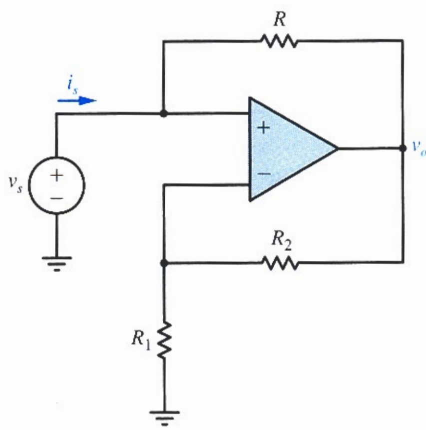

Fig. P2.30

2.31 For the op-amp circuit shown in Fig. P2.31, find (a) v_o, and (b) the resistance v_s/i_s. (See p. 104.)

2.32 For the op-amp circuit shown in Fig. P2.31, interchange the 1-Ω and 2-Ω resistors, and find (a) v_o, and (b) the resistance v_s/i_s. (See p. 104.)