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8. 1 : 5

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3. (a) 0.75 V
   (b) 3.0 V
   (c) 4.5 V
5. (a) 1 : 20
   (b) 5.0 A
6. 8.0 V
7. 16 mA
8. 3.0×10^{1} A

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2. (a) 6.4×10^{-7} C
   (b) -9.9×10^{-8} C
3. (a) 5.0×10^{-9} C
   (b) -9.9×10^{11}
4. 6.3×10^{3} C
7. 120 V
8. (a) 0.86 A
   (b) 7.7 W
   (c) 2.3×10^{2} J
   (d) 26 C
   (e) 1.6×10^{20}
9. $15
10. Diagram (a)
    (a) $I_1 = I_2 = I_3 = 1.0$ A
    (b) $V_1 = 2.0$ V; $V_2 = 3.0$ V; $V_3 = 1.0$ V
    (c) 1.1×10^{4} J

    Diagram (b)
    (a) $I_1 = 4.0$ A; $I_2 = 3.0$ A; $I_3 = 2.0$ A
    (b) $V_1 = V_2 = V_3 = 12.0$ V
    (c) 1.9×10^{5} J

    Diagram (c)
    (a) $I_1 = 1.0$ A; $I_2 = I_3 = I_4 = 0.50$ A
    (b) $V_1 = 7.0$ V; $V_2 = 3.0$ V; $V_3 = 1.0$ V; $V_4 = 2.0$ V
    (c) 1.8×10^{4} J
11. (a) 10 Ω
    (b) 30 Ω
    (c) 0.80 A
16. (a) –4.0 V
    (b) 2.8 V
    (c) 2.0 V
    (d) 8.0 V
17. (a) 300 V
    (b) 150
18. 100
20. (a) 0.80 A
    (b) 0.77 W
    (c) 1.9×10^{-6}