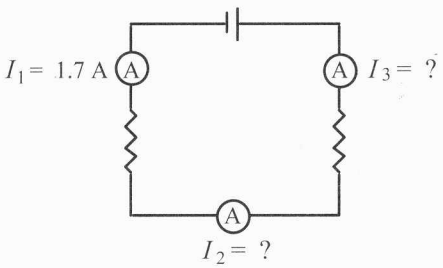
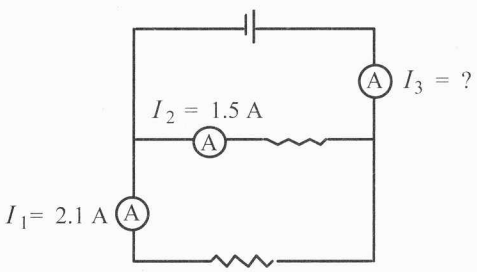
PRACTICE EXERCISES: ELECTRIC CIRCUITS

Formulas:	For series circuits	For parallel circuits
	$I_T = I_1 = I_2 = I_3 \ldots$	$I_T = I_1 + I_2 + I_3 + \ldots$
$V = IR$	$V_T = V_1 + V_2 + V_3 + \ldots$	$V_T = V_1 = V_2 = V_3 = \ldots$
	$R_T = R_1 + R_2 + R_3 + \ldots$	$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \ldots$

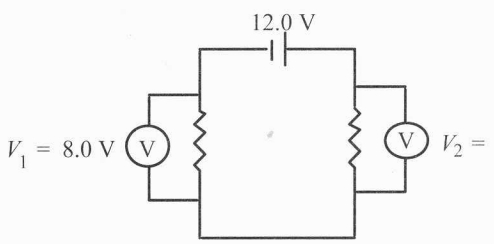
1. What are the values of I_2 and I_3 in the circuit at right?

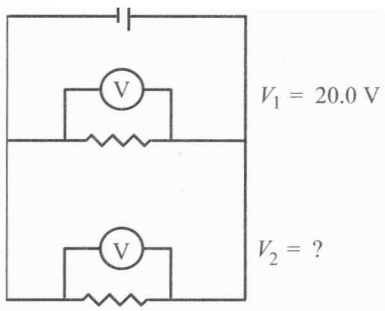


2. What is the value of I_3 in the circuit at right?

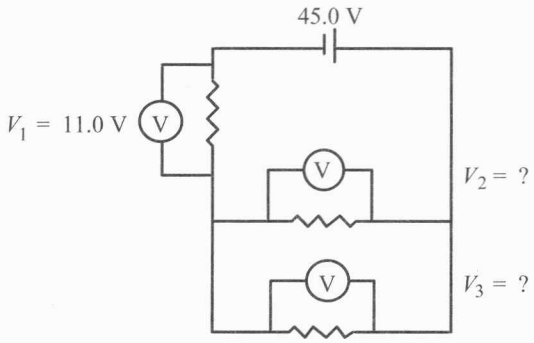


3. What is the value of V_2 in the circuit at right?

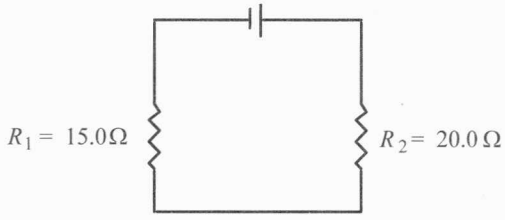




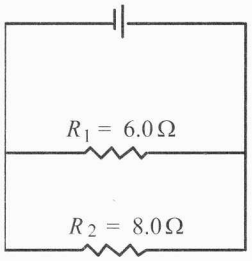
5. What are the values of V_2 and V_3 in the circuit at right?



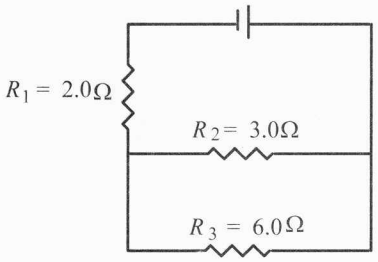
6. What is the total resistance in the circuit at right?



7. What is the total resistance in the circuit at right?



8. What is the total resistance in the circuit at right?



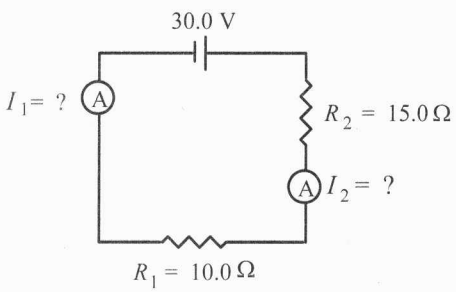
9. What is the total resistance in a circuit containing three resistors in series? The values of these resistors are 9.0Ω, 3.0Ω, and 12.0Ω

10. What is the total resistance in a circuit containing three resistors in parallel? The values of these resistors are 2.0Ω, 4.0Ω, and 8.0Ω.

If the values of two of these resistors are 4.5Ω and 9.0Ω, what is the value of the third resistor?

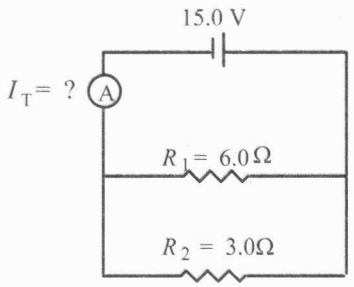
12. The total resistance in a circuit containing three resistors in series is 12.0Ω.
If the values of two of these resistors are 6.0Ω and 4.0Ω, what is the value of the third resistor?

13. a) What are the values of I_1 and I_2 in the circuit at right?



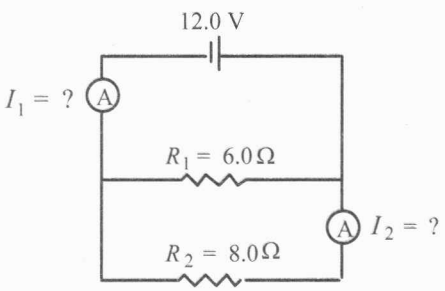
b) What is the power dissipated in R_1 ?

14. a) What is the value of I_T in the circuit at right?



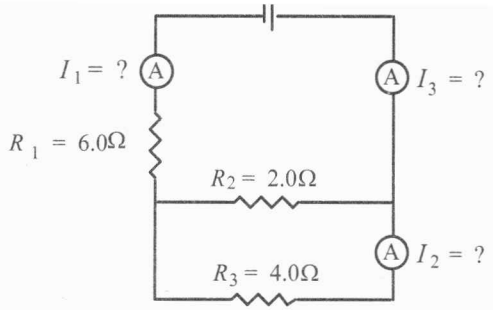
b) What is the power dissipated in R_2 ?

15. a) What are the values of I_1 and I_2 in the circuit at right?



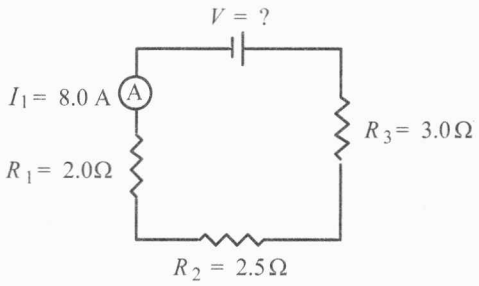
b) What is the power dissipated in the circuit?

at right?



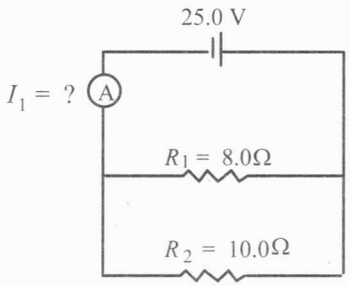
b) What is the power dissipated in the circuit?

17. a) What is the potential difference supplied by the power source in the circuit at right?



b) What is the power dissipated by the circuit?

18. a) What is the value of I_1 in the circuit at right?



b) What is the power dissipated in the circuit?