

BLM Answers

BLM 8-1 Know Your Current

1. a) microwave, kettle, toaster
b) heat
2. $2\text{ A} + 2\text{ A} + 1\text{ A} + 3\text{ A} = 8\text{ A}$. You would need a circuit with at least 8 A.
3. a) Yes. $6\text{ A} + 2\text{ A} + 2\text{ A} = 10\text{ A}$. The circuit is 12 A.
b) Yes. 11 A is less than 12 A.
c) No. 13 A is more than 12 A.

BLM 8-3 Safe or Overloaded?

1. a) safe: $3\text{ A} + 3\text{ A} + 2\text{ A} + 6\text{ A} = 14\text{ A}$
The circuit is 15 A.
b) safe: $3\text{ A} + 3\text{ A} + 2\text{ A} + 2\text{ A} + 3\text{ A} = 13\text{ A}$
The circuit is 15 A.
c) safe: $1\text{ A} + 8\text{ A} + 3\text{ A} = 12\text{ A}$
The circuit is 12 A.
d) unsafe: $3\text{ A} + 2\text{ A} + 2\text{ A} + 6\text{ A} = 13\text{ A}$
The circuit is 12 A.
e) unsafe: $3\text{ A} + 3\text{ A} + 2\text{ A} + 8\text{ A} = 16\text{ A}$
The circuit is 15 A.
f) unsafe: $3\text{ A} + 2\text{ A} + 2\text{ A} + 6\text{ A} = 13\text{ A}$
The circuit is 12 A.

BLM 8-4 Label the Picture

1. power transmission grid
2. GFI outlet
3. a) hot wire
b) neutral wire
c) ground wire
4. transformer
5. overloaded
6. circuit panel
7. circuit breaker
8. fuse
9. fuse box
10. ground

BLM 8-5 Chapter 8 Practice Test

1. b) draw
2. c) fuse
3. e) trips
4. f) wiring
5. d) ground
6. a) central electric panel

7. a) F. A device that can increase or decrease voltage is called a transformer.
b) F. A hot wire carries current to the load. Or, a neutral wire carries current away from the load.
c) T
d) T
8. A: hot or “live”; red or black
B: neutral; white
C: ground; bare copper or green
9. a) safe: $8\text{ A} + 8\text{ A} + 5\text{ A} = 21\text{ A}$ Less than 24 A.
b) safe: $3\text{ A} + 3\text{ A} + 3\text{ A} + 1\text{ A} = 10\text{ A}$ Less than 12 A.
10. The circuit will become overloaded. The fuse or circuit breaker may blow or trip. $3\text{ A} + 3\text{ A} + 3\text{ A} + 3\text{ A} = 12\text{ A}$ The circuit is 9 A.
11. a) GFI outlets are used because some appliances do not have ground wires.
b) The GFI outlet has a sensor and a circuit breaker that detects a ground fault and cuts the current.

BLM 8-6 Chapter 8 Test

1. c) overloaded
2. d) grounded
3. f) circuit panel
4. b) fuse
5. a) power transmission grid
6. e) breaker
7. a) F. A circuit breaker can be reset when it trips.
b) T
c) F. A neutral wire is only white.
d) T
8. A: hot or “live”; red or black
B: neutral; white
C: ground; bare copper or green
9. a) safe: $8\text{ A} + 8\text{ A} = 16\text{ A}$ Less than 20 A.
b) unsafe: $4\text{ A} + 4\text{ A} + 4\text{ A} + 1\text{ A} = 13\text{ A}$ More than 12 A.
10. The circuit will become overloaded. The fuse or circuit breaker may blow or trip. $4\text{ A} + 4\text{ A} + 4\text{ A} + 4\text{ A} = 16\text{ A}$. The circuit is 12 A.
11. a) GFI outlets are used because some appliances do not have ground wires.
b) The GFI outlet has a sensor and a circuit breaker that detects a ground fault and cuts the current.