Chapter 1
Introduction

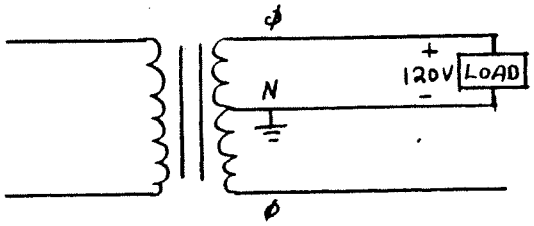
1.1 Is it permissible to connect an electrical load between the ungrounded conductor and grounded conductor of an electrical system? Yes.

1.2 Is it permissible to connect an electrical load between the ungrounded conductor and grounding conductor of an electrical system? No.

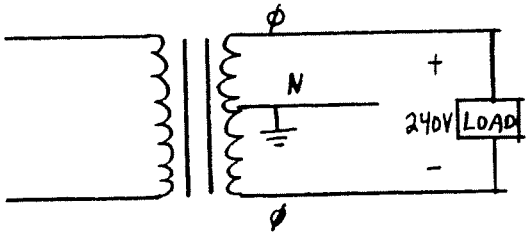
1.3 Is it permissible to connect an electrical load between the "b" phase and the grounded conductor of a 240/120 V, three-phase, four-wire system? No.

1.4 Why is an equipment grounding conductor present in an electrical system? The equipment grounding conductor provides a safety ground for the electrical equipment. This safety ground minimizes the potential for electrocution and provides a return path for the flow of ground fault current.

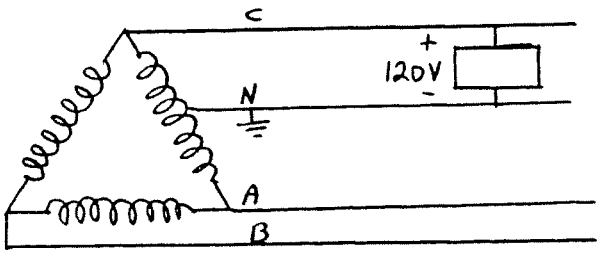
1.5 Sketch the connections for a 120 V single-phase load in a 120/240 V, single-phase, three-wire system.



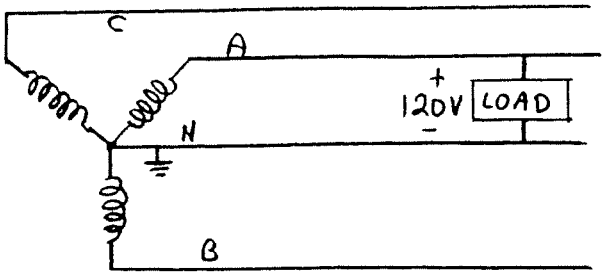
1.6 Sketch the connections for a 240 V single-phase load in a 120/240 V, single-phase, three-wire system.



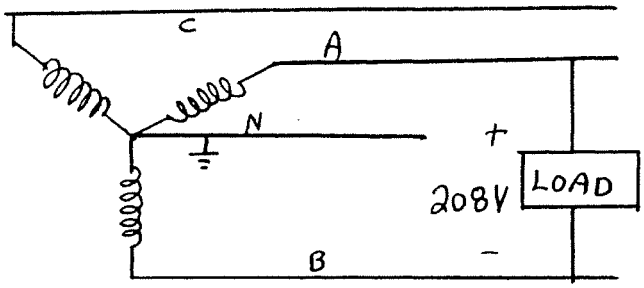
1.7 Sketch the connections for a 120 V single-phase load in a 240/120 V, three-phase, four-wire system.



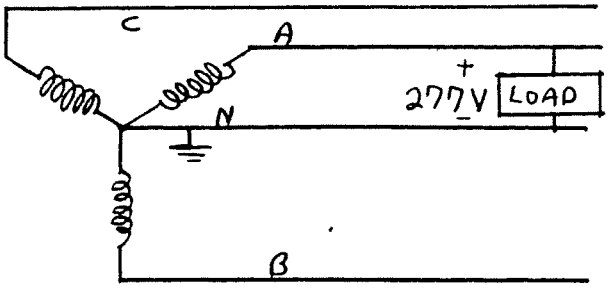
1.8 Sketch the connections for a 120 V single-phase load in a 208Y/120 V, three-phase, four-wire system.



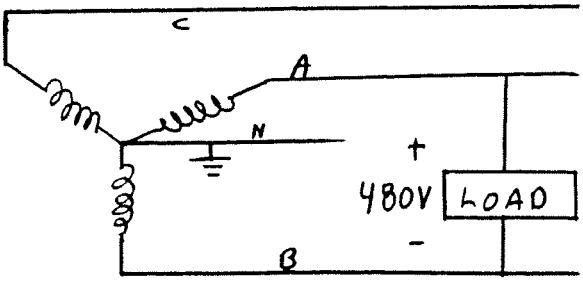
1.9 Sketch the connections for a 208 V single-phase load in a 208Y/120 V, three-phase, four-wire system.



1.10 Sketch the connections for a 277 V single-phase load in a 480Y/277 V, three-phase, four-wire system.



1.11 Sketch the connections for a 480 V single-phase load in a 480Y/277 V, three-phase, four-wire system.



1.12 State three areas of responsibility for a civil/structural engineer on a design project

- Structural steel design
- Site grading
- Location of utilities
- Equipment pads and foundations

1.13 State three areas of responsibility for an environmental engineer on a design project.

- Ecological impact studies, wetlands
- On site disposal permitting
- Wastewater and water treatment plant design

1.14 State three areas of responsibility for a mechanical engineer on a design project.

- HVAC
- Plumbing
- Fuel piping system for emergency generators