

## Chapter 2 Solutions

### Reviewing the Basics

1. When taking a computer apart, why is it important to not stack boards on top of each other?

**Answer: You could accidentally dislodge a chip.**

2. Why is it important to remove loose jewelry before working inside a computer case?

**Answer: Because the jewelry might get caught in cables and components as you work.**

3. When assembling a desktop computer, which do you install first, the drives or the motherboard?

**Answer: Drives**

4. What is the purpose of raised screw holes or standoffs installed between the motherboard and desktop case?

**Answer: To prevent a short that might happen if lines or circuits on the bottom of the motherboard touch the case when the system is running.**

5. When installing the front panel wires to the motherboard front panel header, how do you know which pins to use for each wire if the pins on the header are not labeled?

**Answer: You can find this information in the motherboard user guide.**

6. How many pins does the CPU auxiliary power connector on a motherboard have?

**Answer: 4 pins**

7. Why are laptops usually more expensive than desktop computers with comparable power and features?

Answer: Laptops use compact hard drives that can withstand movement even during operation, and small memory modules and CPUs that require less voltage than regular components. In general, it costs more to make similar components that take up less space and require less power.

8. Why is the service manual so important to have when you disassemble a laptop?

Answer: The service manual for the laptop model explains how to open the case and remove components without damaging the case or components. Each laptop model is proprietary in design and the ways to disassemble a laptop vary widely.

9. When a laptop internal device fails, what three options can you use to deal with the problem?

Answer: Return the laptop to a service center for repair

Substitute an external component for the internal component

Replace the internal component

10. After you have removed the AC adapter and all peripherals, what is the next component you should always remove before servicing any internal laptop components?

Answer: The battery pack

## Thinking Critically

1. You disassemble and reassemble a desktop computer. When you first turn it on, you see no lights and hear no sounds. Nothing appears on the monitor screen. What is the most likely cause of the problem? Explain your answer.
  - a. A memory module is not seated properly in a memory slot.
  - b. You forgot to plug up the monitor's external power cord.

- c. A wire in the case is obstructing a fan.
- d. Power cords to the motherboard are not connected.

Answer: d. Power cords to the motherboard are not connected. All the other answers would still cause the system to start the boot even though it might fail. If the motherboard is not getting power, it will not start the boot.

2. You are looking to buy a laptop on a budget and want to save money by not purchasing an extended service agreement with the manufacturer beyond the first year. What should you consider when choosing manufacturers to limit your search? Which manufacturers would you choose and why?

Answer: You want to be able to maintain and repair the laptop on your own after the warranty expires. You will need access to documentation and new parts. Consider that two manufacturers, Lenovo and Dell, provide their service manuals online free of charge. They also provide documentation about how their laptops are disassembled and options to purchase proprietary parts without first being an authorized service center.

3. A four-year old laptop will not boot and presents error messages on screen. You have verified with the laptop technical support that these error messages indicate the motherboard has failed and needs replacing. What is the first question you should ask yourself before performing the repair?
- a. Will replacing the motherboard be more costly than purchasing a new laptop?
  - b. Can you find a replacement motherboard?
  - c. Can you find the service manual to show you how to replace the motherboard?
  - d. Is the laptop still under warranty?

Answers:

All questions are good questions to ask before attempting the repair. The first question to ask is

d. Is the laptop still under warranty?