Applying Concepts: Internet Down

One evening, you're up late working to meet a fast-approaching deadline when suddenly your Internet connection fails. Much of your work requires Internet access for research, but you belay the panic for a few moments to evaluate the situation:

- **You try a couple of different websites in your browser, then open a different browser application and try a couple of websites again. None of the sites will load**
- **You check all the cable connections between your computer and your network's demarc. Everything looks normal**
- **You power cycle the modem and router by unplugging both devices from the electrical outlet, waiting a moment, plugging in the modem, waiting for it to establish a connection with the ISP, then plugging in the router**
- **You check the Network Connections status on your computer and confirm that you have a functioning connection with your network**
- **You try again to navigate to a website in your browser, but the page still won't load**
- **You open a Command Prompt window and ping one of Google's servers at 8.8.8.8; The ping works**
- **You ping Google's website at google.com, but this time it doesn't work**
- **You pull up an outage reporting website for your ISP on your smartphone and find that a few hundred other people have reported an outage in your area**

With a quick adjustment, you get your Internet service functioning again and continue with your work. Which of the following did you do and why?

a. **You switched out the Ethernet cable connecting your modem to your router because the cable was damaged.**
   I WILL NOT perform this because the cable is not damaged. This is because the connection to the internet is functional, as shown by the successful ping to 8.8.8.8 shows that it is not the issue.

b. **You used "ipconfig" to release the IP address on your computer and get a new one from your network's DHCP service because your computer had a duplicate IP address.**

I MIGHT perform this because the issue is not with duplicate IP addresses; the network connection is functioning properly. If there's a possibility of an IP conflict on the local network, releasing and renewing the IP address might resolve it.

c. **You changed the DNS settings on your router to point to Google's DNS servers instead of the DNS servers of your ISP because the ISP's DNS servers were down.**
I WILL perform this because the successful ping to 8.8.8.8 indicates the internet is working, but the inability to load websites or ping google.com suggests a problem with DNS resolution. Changing the DNS settings to a reliable public server (like Google's) would likely resolve this issue.

d. **You switched to a different ISP because the former ISP's service was unreliable.**
I WILL NOT perform this because it would be excessive. The issue is likely temporary and limited to DNS resolution, not a complete ISP failure.

e. **You replaced the router with a new router you had ready to go, knowing that the old router had already exceeded its life expectancy and had finally ceased to function.**
I WILL NOT perform this because the router is working fine since the network connection is operational.

f. **You created an ad hoc network with another computer on your network and used that computer's access to the Internet to continue your research because the Wi-Fi radio on your computer had died and will need to be replaced.**
I WILL NOT perform this because the Wi-Fi radio or other hardware isn't failing.

g. **You performed a factory reset on your modem so it would reinitiate a connection with the ISP.**
I MIGHT perform this because factory resetting the modem can resolve certain connectivity or configuration issues, especially if the modem has corrupted settings. But in this scenario, the modem appears to be functioning properly, as it were able to successfully ping Google's IP address. Resetting the modem would be unnecessarily disruptive in this scenario.

h. **You updated the default gateway on your computer because it was unable to communicate with the router.**
I WILL NOT perform this because the default gateway is operational because the ping test to 8.8.8.8 succeeded.

i. **You restarted your computer because Windows had updates that needed to be installed.**

I MIGHT perform this because if the computer's network settings or cache are causing issues, restarting can often resolve the problem. But the issue is related to DNS resolution, not a problem with the computer itself. Restarting might not address the root cause.