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# COMP 204 Homework 4

Answer the following questions based on your reading of the text book, the module key points, and the instructor’s presentation this week.

1. **[5 points]** Explain the difference between “Host” and “Network” addresses in IPv4. Give an example a “Host” and a “Network” address in your home, work, or fictional network. Why is this separation of addresses important?
2. **[5 points]** Most wireless routers for home users are configured with a DHCP server that hands out addresses from the 192.168.1.0/24 range. Why is that? What else must the router do to make it “just work” when a home user plugs it in?
3. **[5 points]** What is the binary subnet mask for the IP address of 172.16.10.15/28? What is the decimal subnet mask?
4. **[5 points]**  Look up on the internet the concept of the “Virtual IP address”. What is it used for? What are the advantages of using Virtual IPs?
5. **[5 points]** Research addressing on Ipv6. What are the advantages? What are the disadvantages? (Hint: here’s a good place to start: <http://scale-out-blog.blogspot.com/2011/01/virtual-ip-addresses-and-their.html>)
6. **[5 points]** A company has been assigned the IP address range 107.54.223.192/26. List *all* possible combinations of hosts and networks (i.e. “x networks of y hosts”). Make sure your host count considers the “network” and “broadcast” addresses.