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Pledge: I pledge my honor that I have abided by the Stevens honor system.

Each correct answer is worth 10 points.

1. In the OSI model as well as in TCP/IP, what layer provides end-to-end communication?
Transport layer.
2. Assume that we are using classful addressing. What class of network would the IP address 149.150.2.6 fall into?
Class B.
3. In one sentence, explain why classful addressing was abandoned.
As the internet grew, the address space was limited and with more router table entries, the routers had performance problems.
4. Given the subnet mask 255.255.0.0 in dotted decimal format, what would be the equivalent CIDR or slash notation?
/16
5. Why was IPv6 invented -- what is the main problem it solves?
Invented because of the amount of hosts on the internet, and it created many more addresses.
6. Rewrite the IPv4 address 161.98.167.71 as an IPv6 address. You may use the shortcut mentioned in the slides.
::FFFF:161.98.167.71
For 5 points of extra credit, rewrite the same address in full-hexadecimal IPv6 format.
::FFFF:A162:A747
7. Given the address 172.27.156.41/28, what is the address of the network itself in dotted decimal notation?
172.27.156.32
8. Given the same address 172.27.156.41/28 as above, what is the broadcast address in dotted decimal notation?
172.27.156.47
9. a) How many hosts can exist on the network specification 172.27.156.41/28? 14

b) How many /30 subnets can there be? 4
10. Why would a /31 subnet mask be rather useless for your network?
It leaves only 2 addresses, one for the network number and one for the broadcast address.