IP addressing:

Find the class of each of the following addresses in the table.

Answer with one of the letters A, B, or C.

IP address	Class of the address
200.200.200.200	C
2.2.2.2	A
150.150.150.150	B
10.10.10.10	A

Answer 1:

Correct!

C

Answer 2:

Correct!

A

Answer 3:

Correct!

B

Answer 4:

Correct!

A

Question 2

8 / 8 pts

IP addressing:

Find the netid and the hostid of the following IP addresses (separate the bytes with dots when deemed necessary and do not put dots after one single byte or after the last byte).

IP address	netid	hostid
200.200.200.200	200.200.200	200
2.2.2.2	2	2.2.2
150.150.150.150	150.150	150.150
10.10.10.10	10	10.10.10

Answer 1:

Correct!

200.200.200

Answer 2:

Correct! 200

Answer 3:

Correct! 2

Answer 4:

Correct! 2.2.2

Answer 5:

Correct! 150.150

Answer 6:

Correct! 150.150

Answer 7:

Correct! 10

Answer 8:

Correct! 10.10.10

Question 3

12 / 12 pts

IP addressing:

Fill up the table with the adequate answer (when non-applicable, put the mention: N/A)

Pay attention in each column to the IP address provided.

IP@ and Mask	100.0.0.0 255.224.0.0	150.150.0.0 255.255.252.0	200.200.0.0 255.255.255.248
Indicate the total amount of subnets in this configuration.	8	64	32
Indicate the total amount of possible hosts in each subnet.	2097150	1022	6
Indicate the IP@ of the 20th subnets. *N.B: the 1st subnet being the subnet 0*	20th subnet = N/A	20th subnet = 150.150.76.0	20th subnet = 200.200.0.152
Indicate the broadcast @ of the 20th subnets.	20th subnet = N/A	20th subnet = 150.150.79.255	20th subnet = 200.200.0.159

Answer 1:

Correct!

8

Answer 2:

Correct!

64

Answer 3:

Correct!

32

Answer 4:

Correct!

2097150

Answer 5:

Correct!

1022

Answer 6:

Correct!

6

Answer 7:

Correct!

N/A

Answer 8:

Correct!

150.150.76.0

Answer 9:

Correct!

200.200.0.152

Answer 10:

Correct! N/A

Answer 11:

Correct! 150.150.79.255

Answer 12:

Correct! 200.200.0.159

Question 4

6 / 6 pts

IP Network Architecture:

An organization has acquired the IP address 130.168.0.0 and wants to build a network subdivided into 200 subnets.

1) What is the default subnet mask of this address? Answer: 255.255.0.0

2) What is the static subnet mask you choose to accommodate this network of 200 subnets? Answer: 255.255.255.0

3) What is the total number of valid IP addresses you will have in each subnet with the defined subnet mask in question 2? Answer: 254

Answer 1:

Correct! 255.255.0.0

Answer 2:

Correct! 255.255.255.0

Answer 3:

Correct! 254

Question 5

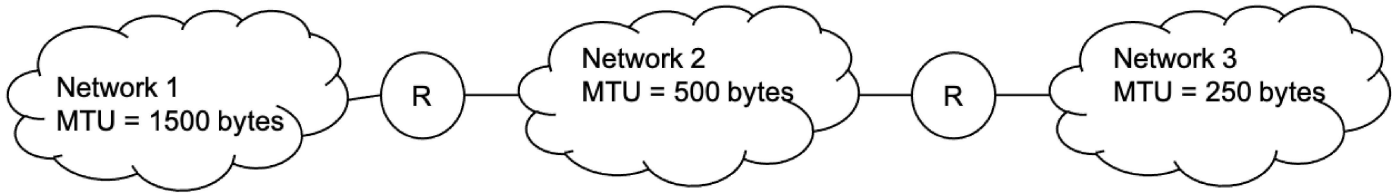
16 / 16 pts

Fragmentation:

The IP packet, **P1**, with the header indicated below is generated by a host in network 1 (MTU=1500 bytes) and is travelling to network 3 (MTU=250 bytes), passing through network 2 (MTU=500 bytes). See figure below.

P1

4	5	ToS	1000
ID		000	0
100	6	CRC	
@S			
@D			



1) **In Network 2:**

- Indicate the total number of fragments of the original packet P1: 3 fragments
- What is the data size of the first (1st) fragment? 480 bytes
- What is the data size of the last fragment? 20 bytes
- What is the total length of the last fragment? 40 bytes
- What is the Offset value of the second (2nd) fragment? 60
- What is the Time To Live (TTL) of each fragment (all fragments have the same TTL)? 99
- What is the value of the flags field (0DM) in the first (1st) fragment? 001

- What is the value of the flags field (0DM) in the last fragment? 000

2) **In Network 3:**

In network 3, the fragments that have been generated in network 2 may have been again fragmented.

- Indicate the total number of fragments of the original packet P1. 7 fragments
- What is the data size of the first (1st) fragment? 224 bytes
- What is the total length of the first (1st) fragment? 244 bytes
- What is the data size of the third (3rd) fragment? 32 bytes
- What is the total length of the third (3rd) fragment? 52 bytes
- What is the offset value of the second (2nd) fragment? 28
- What is the Time To Live (TTL) for each fragment? 98
- What is the value of the flags field (0DM) in the third (3rd) fragment? 001

Answer 1:

Correct!

3

Answer 2:

Correct!

480

Answer 3:

Correct!

20

Answer 4:

Correct!

40

Answer 5:

Correct!

60

Answer 6:

Correct!

99

Answer 7:

Correct!

001

Answer 8:

Correct!

000

Answer 9:

Correct!

7

Answer 10:

Correct!

224

Answer 11:

Correct! 244

Answer 12:

Correct! 32

Answer 13:

Correct! 52

Answer 14:

Correct! 28

Answer 15:

Correct! 98

Answer 16:

Correct! 001

Quiz Score: **46** out of 46