Submit a page with the answer to the following questions

1.
convert binary to decimal:

a. 11001100 = 128+64+0+0+8+4+0+0 = 204;

128	64	32	16	8	4	2	1
1	1	0	0	1	1	0	0

b. 00001101 = 0+0+0+0+8+4+0+1 = 13;

128	64	32	16	8	4	2	1
0	0	0	0	1	1	0	1

c. 11100000 = 128+64+32+0+0+0+0+0 = 224;

128	64	32	16	8	4	2	1
1	1	1	0	0	0	0	0

d. 00000111 = 0+0+0+0+0+4+2+1 = 7;

128	64	32	16	8	4	2	1
0	0	0	0	0	1	1	1

2.
convert decimal to binary

a. 48 = 0 0 1 1 0 0 0 0;

128 > 48 = 0 to binary
64 > 48 = 0 to binary
32 <= 48 = 1 to binary
48 - 32 = 16;
16 <= 16 = 1 to binary
16 - 16 = 0;
8 > 0 = 0 to binary
4 > 0 = 0 to binary
2 > 0 = 0 to binary
1 > 0 = 0 to binary

128	64	32	16	8	4	2	1
0	0	1	1	0	0	0	0

b. 135 = 1 0 0 0 0 1 1 1;

128 <= 135 = 1 to binary

135 - 128 = 7;
64 > 7 = 0 to binary
32 > 7 = 0 to binary
16 > 7 = 0 to binary
8 > 7 = 0 to binary
4 <= 7 = 1 to binary
7 - 4 = 3;
2 <= 3 = 1 to binary
3 - 2 = 1;
1 <= 1 = 1 to binary
1 - 1 = 0;

128	64	32	16	8	4	2	1
1	0	0	0	0	1	1	1

c. 60 = 0 0 1 1 1 1 0 0;

128 > 60 = 0 to binary
64 > 60 = 0 to binary
32 <= 60 = 1 to binary
60 - 32 = 28;
16 <= 28 = 1 to binary
28 - 16 = 12;
8 <= 12 = 1 to binary
12 - 8 = 4;
4 <= 4 = 1 to binary
4 - 4 = 0;
2 > 0 = 0 to binary
1 > 0 = 0 to binary

128	64	32	16	8	4	2	1
0	0	1	1	1	1	0	0

3.
The default subnet mask for IP 10.1.3.2 in dot notation is: 255.0.0.0 write this network and its subnet mask in prefix (CIDR) notation

- 10.0.0.0 /8

4.
Given a Class C network: 200.1.1.0 We want 5 subnets, each with 30 hosts on it.
How many bits to borrow ?
How many bits to leave?
What is the subnet mask? (in dot notation and in CIDR notation)

3 Borrowed Bits = 8 Number of Subnets Created;
If 2 bits are borrowed, only 4 subnets are created;
Class C network = /24 Classful Mask (Prefix Notation);
3 Borrowed Bits + 24-bit Classful Mask = 27-bit subnet mask;
Dot Notation: 255.255.255.224;

Prefix Notation: /27;

5.
Given a Class B network: 132.70.0.0 and a subnet mask of: 255.255.192.0.
What is the subnet mask in CIDR notation.

Class B network + Classful Mask 255.255.0.0 = /16 Classful Mask (Prefix Notation);
Dotted-Decimal Notation 255.255.192.0 = /18 Classful Mask (Prefix Notation);
Network address with prefix notation: 132.70.0.0 /18;