Advanced Networking Assignment

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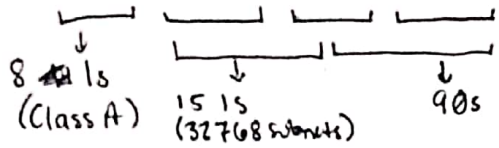
1. Assume you have a class A address. Construct the subnet mask to divide it into 32768 subnets. Give your answers in dotted decimal and the prefix notation.

$2^{15}$




255.255.254.0 /23

2. WSU has a block of 48 Class C addresses starting at address 199.17.128.0 Construct subnet (supernet) masks to divide this into 2 CIDR blocks.
Give the starting address, mask, and prefix for each of the 2 blocks.

199.17.128.0 → /24 (class C)

~~255.255.254.0 /23 199.17.128.0~~

~~255.255.254.0 /23 199.17.129.0~~

1000 0000

$\log_2 32 = 5$ $\log_2 16 = 4$

48 → 32+16

255.255.224.0

199.17.128.0 /19

1010 0000

199.17.160.0 /20

255.255.240.0

3. Divide WSU's addresses into 3 CIDR blocks.

| | | |
|---|---|---|
| 199.17.128.0 | 255.255.252.0 | /22 |
| 199.17.129.0 | 255.255.252.0 | /22 |
| 199.17.130.0 | 255.255.252.0 | /22 |
| 199.17.131.0 | unused | |

4. In Watkins we use 2 class C addresses - 199.17.161.0 and 199.17.162.0
Can these be formed into a CIDR block?

No because 161 is odd (0b10100001). Can't supernet because the mask already covers the netid of the address.