Subnetting Cheat Sheet

1. Default Masks

• Class A → /8 (255.0.0.0)

• Class B → /16 (255.255.0.0)

• Class C → /24 (255.255.255.0)

2. Borrowed Bits → Number of Subnets

• 2^1 = 2 subnets

• 2^2 = 4 subnets

• 2^3 = 8 subnets

• $2^\blacksquare$ = 16 subnets

3. Hosts Formula

• Hosts per subnet = $2^{\wedge}$(host bits) − 2

• Subtract 2 for Network ID & Broadcast

4. Block Size Formula

• Block Size = 256 − Mask Octet

• Used to list subnet ranges

5. Common Masks & Block Sizes

• /24 → 255.255.255.0 → Block 256

• /25 → 255.255.255.128 → Block 128

• /26 → 255.255.255.192 → Block 64

• /27 → 255.255.255.224 → Block 32

• /28 → 255.255.255.240 → Block 16

• /29 → 255.255.255.248 → Block 8

• /30 → 255.255.255.252 → Block 4

6. How to Find Subnet for Any IP

• Step 1: Note the mask & find block size

• Step 2: Divide last octet of IP by block size

• Step 3: Lower multiple = Network ID

• Step 4: Upper multiple − 1 = Broadcast

• Step 5: Everything between = Host range

7. Example: /27 Subnetting

• Mask: 255.255.255.224

• Block: 256 − 224 = 32

• Subnets: 0, 32, 64, 96, 128, 160, 192, 224

• Example Range: 193.1.1.128 → 193.1.1.159 (usable 129–158)