Total IP	32768	16384	8192	4096	2048	1024	512	256									
	128	64	32	16	8	4	2	1	TIP	128	64	32	16	8	4	2	1
Mask	128	192	224	240	248	252	254	255	|	128	192	224	240	248	252	254	255
CIDR	/17	/18	/19	/20	/21	/22	/23	/24	|	/25	/26	/27	/28	/29	/30	/31	/32
Useable Hosts	32768	16384	8190	4094	2046	1022	510	254	|	126	62	30	14	6	2	0	-1

^ 255.255.128 .0 - 255.255.255.0^   ^ 255.255.255.128 – 255.255.255.255^

1. To make this chart start with **left most column 2ⁿᵈ row** and write out 128 and halve it till you get to one, then do the same thing to the other side of the chart.
2. **In the 3ʳᵈ row** write out 128 and ADD the halved numbers in the row above but skip the first number. So, start with 128 and add 64 to get 192, then add 32 to get 224 then add 16 and so on… till you get to 255. Copy this row directly across like in the row above.
3. In the 4ᵗʰ row write the CIDR notations in order starting with /17 and continue through out the entire row till you get to /32.
4. This part is confusing but stay with me. In the 2ˢᵗ row you'll see a TIP everything to the **RIGHT** of that is your TOTAL IP ADDRESSES for the CIDR notation below it.
5. The 1ˢᵗ row you'll see bigger numbers that is a CONTINUATION of the TIP. So logically the TIP is read from right to left starting with one and ending at 32768. For example, if you have an IP address of 192.168.10.0 /24, Find the /24 in your chart and you'll see there are a TOTAL of 256 IP addresses (0 – 255). To create that 1ˢᵗ row, take the 128 that is in the TIP row and double it, continue this until you get to the /17 and you should end up with 32768.
6. The 5ᵗʰ row is each of the IPs from the TIP minus 2 so take each of the numbers from the TIP and subtract 2 from them. This will be your total Useable hosts. For example the 192.168.10.0 /24 address has 254 USEABLE addresses (0 & 255 are your network / broadcast).

Questions to test understanding (answers below):

1. What is the subnet mask of the following IP address, 10.10.15.1 /29
2. How many TOTAL addresses are in the 255.255.252.0 Subnet Mask?
3. How many Useable addresses are in the /25 CIDR?