

if all the numbers of a particular bit length is written in ascending order the first half of those will be complement of second half

for eg: for 2 bit length

00 01 10 11

here 00 is complement of 11 and 01 is of 10

$$\text{complement}(x) = x \oplus (n - 1)$$

where n is bit length

$$x \ \& \ \text{complement}(x) = 0$$
