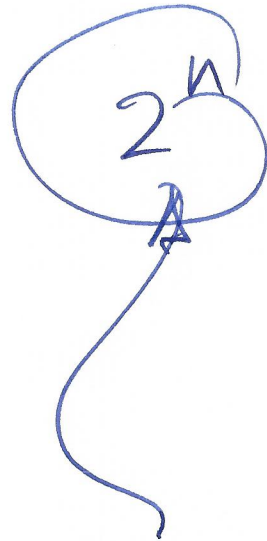
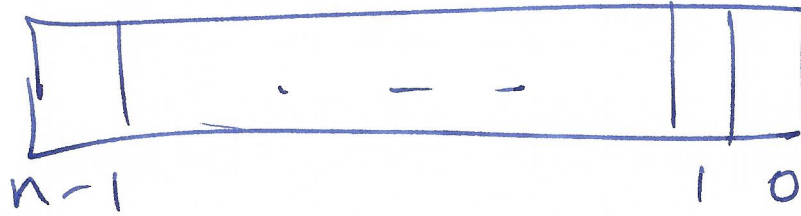


SEE 271 4-12-2017 1



$$2^0 = \boxed{00 \dots 1}$$

$$2^1 = \boxed{\dots 0 | 1 | 0}$$

$$2^2 = \boxed{\dots | 1 | 0 | 0}$$

$2^n = 1$ followed by n 0's

$$2^n - 1 = \begin{array}{r} 100 \dots 0 \\ \underline{ } \\ 011 \dots 1 \end{array}$$

$$\begin{array}{cccc} 0 & 0 & 0 & 1 \\ \uparrow & & & \\ \text{Sign} & & & \end{array} = 1$$

$$\begin{array}{r} 1110 \\ + 1 \\ \hline 1111 \end{array} \leftarrow -1 \text{ (4 bit)}$$

$$00000001 = 1$$

$$\begin{array}{r} 11111110 \\ + 1 \\ \hline 11111111 \end{array} \leftarrow -1 \text{ (8-bit)}$$

$$2^n \quad 1 \underbrace{00 \dots 0}_{n \text{ zeroes}}$$

$$2^n - 1 \quad 0 \underbrace{11 \dots 1}_{n \text{ ones}}$$

$$K = (2^n - 1) - P$$

$$\begin{array}{r}
 2^4 - 1 \quad \boxed{1 \mid 1 \mid 1 \mid 1} \\
 P = 0101 \quad \begin{array}{r}
 \cancel{1} \quad 1 \quad 0 \quad 1 \\
 \hline
 4 \quad 0 \quad 1 \quad 0
 \end{array}
 \end{array}$$

4