

$5_{10}$

$$\begin{array}{r|l} 2 & 5 \\ \hline 2 & 2-1 \\ \hline 2 & 1-0 \\ \hline & 0-1 \end{array} \uparrow$$

$= 0000 \ 0101$

### -9 in Two's Complement

step 1 : Convert positive 9 to binary  
 $= 0000 \ 1001$

step 2 : Invert all and add 1

$$\begin{array}{r} 1111 \ 0110 \\ +1 \\ \hline 1111 \ 0111 \end{array}$$

$$\begin{array}{r|l} 2 & 9 \\ \hline 2 & 4-1 \\ \hline 2 & 2-0 \\ \hline 2 & 1-0 \\ \hline & 0-1 \end{array} \uparrow$$

$$(x+y)(x+z)$$

$$x(x+z) + y(x+z)$$

$$xx + xz + xy + yz$$

$$x + xz + xy + yz$$

$$x + xy + yz$$

$$\underline{\underline{x + yz}}$$

Distributive Law

Distributive Law

Idempotent Law  $(A \cdot A = A)$

Redundancy Law  $(A + AB = A)$

Redundancy Law