**AND/OR GATE**

$(\overbar{A} + \overbar{B})(\overbar{C}+\overbar{D})$ [Theorem 13]

$\overbar{A}∙\overbar{B}+\overbar{A}∙\overbar{D}+\overbar{B}∙\overbar{C}+\overbar{B}∙\overbar{D}$ [Theorem 3]

$\overbar{A}\left(\overbar{B}+\overbar{D}\right)+ \overbar{B}(\overbar{C}+\overbar{D})$ [Theorem 13]

**NAND GATE**

$\overline{\overline{(\overline{AB})(\overline{CD})}}$ [Cancel double inversions]

($\overline{AB}$)($\overline{CD}$) [Theorem 17]

($\overline{A}$ +$\overline{B}$)($\overline{C }$+ $\overline{D}$) [Theorem 13]

$\overline{A}∙\overline{B}$ + $\overline{A}∙\overline{D}$ + $\overline{B}∙\overline{C}$ + $\overline{B}∙\overline{D}$ [Theorem 3]

$\overline{A}$($\overline{B}+\overline{D})$ + $\overline{B}(\overline{C}+\overline{D})$ [Theorem 13]