

$$\text{NOT} = \bar{A}$$

$$\text{AND} = A \cdot B$$

$$\text{OR} = A + B$$

$$\bar{A} = \overline{A \cdot A}$$

$x \cdot x = x$ (red arrow from $x \cdot x = x$ to $A \cdot A$)
 $\bar{\bar{x}} = x$ (red arrow from $\bar{\bar{x}} = x$ to \bar{A})
 $x \cdot x = x$ (red arrow from $x \cdot x = x$ to $A \cdot A$)

$$A \cdot B = \overline{\overline{A \cdot B}} = \overline{\overline{A} \cdot \overline{B}}$$

$$A + B = \overline{\overline{A + B}} = \overline{\overline{A} \cdot \overline{B}}$$

$\bar{\bar{x}} = x$ (red arrow from $\bar{\bar{x}} = x$ to $\bar{\bar{A}}$)
De Morgan
 $\overline{(x + y)} = \bar{x} \cdot \bar{y}$ (red arrow from $\overline{(x + y)} = \bar{x} \cdot \bar{y}$ to $\overline{\overline{A} \cdot \overline{B}}$)

$$\text{NOT} = \bar{A}$$

$$\text{AND} = A \cdot B$$

$$\text{OR} = A + B$$

$$\bar{A} = \overline{A + A}$$

$x + x = x$ (red arrow from $x + x = x$ to $A + A$)
 $\bar{\bar{x}} = x$ (red arrow from $\bar{\bar{x}} = x$ to \bar{A})

$$A \cdot B = \overline{\overline{A \cdot B}} = \overline{\overline{A} + \overline{B}}$$

De Morgan
 $\overline{(x \cdot y)} = \bar{x} + \bar{y}$ (red arrow from $\overline{(x \cdot y)} = \bar{x} + \bar{y}$ to $\overline{\overline{A} + \overline{B}}$)

$$A + B = \overline{\overline{A + B}} = \overline{\overline{A + B} + \overline{A + B}}$$

$\bar{\bar{x}} = x$ (red arrow from $\bar{\bar{x}} = x$ to $\bar{\bar{A}}$)
 $x + x = x$ (red arrow from $x + x = x$ to $\overline{A + B} + \overline{A + B}$)

