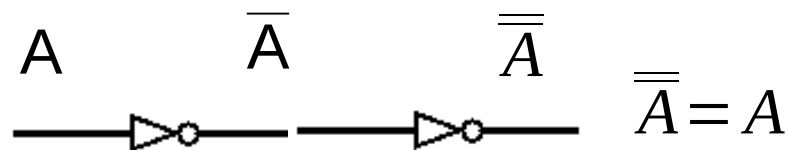
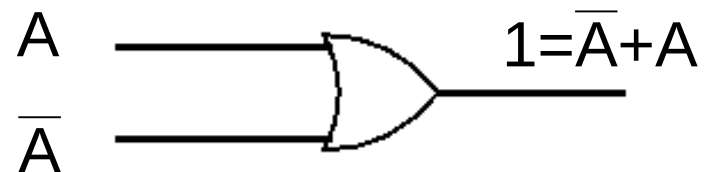
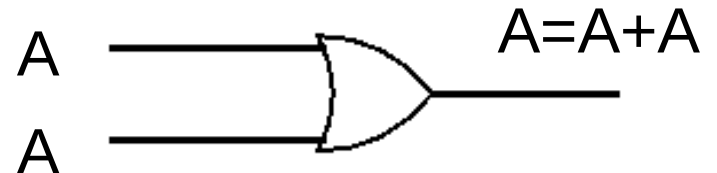
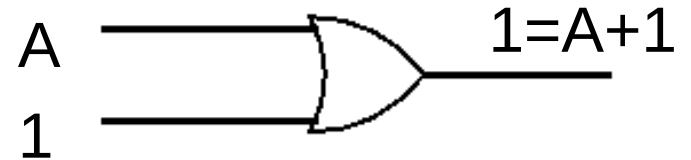
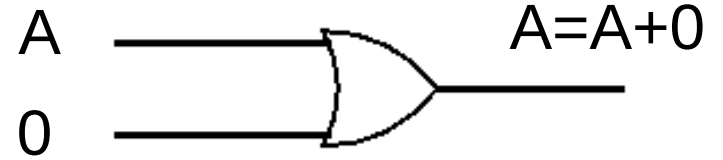
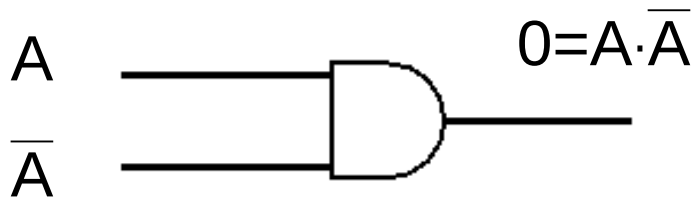
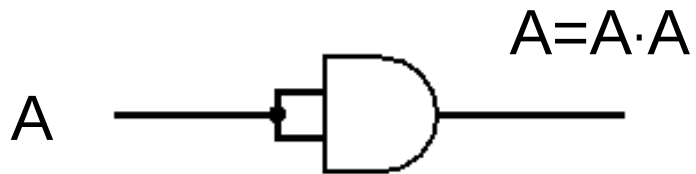
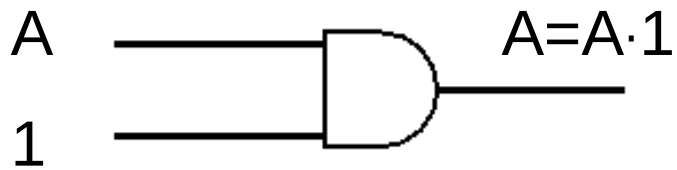
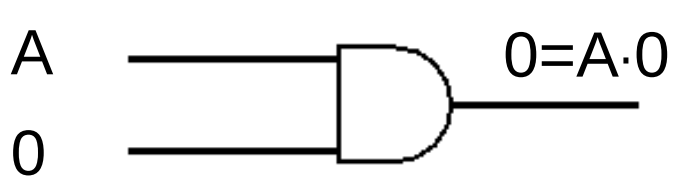
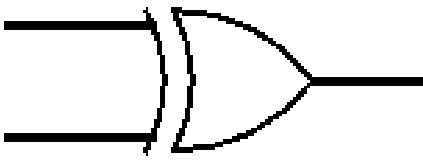


Boolean Algebra Theorems – AND – OR – NOT




Boolean Algebra Theorems – XOR – XNOR

A
 0




$A = A \oplus 0$

A
 1




$\bar{A} = A \oplus 1$

A
 A




$0 = A \oplus A$

A
 \bar{A}




$1 = A \oplus \bar{A}$

\bar{A}
 \bar{A}




$0 = \bar{A} \oplus \bar{A}$

A
 0




$\bar{A} = \overline{A \oplus 0}$

A
 1




$A = \overline{A \oplus 1}$

A
 A



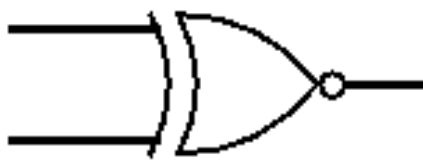
$1 = \overline{A \oplus A}$

A
 \bar{A}



$0 = \overline{A \oplus \bar{A}}$

\bar{A}
 \bar{A}



$1 = \overline{\bar{A} \oplus \bar{A}}$

Boolean Algebra Theorems – Summary

Summary chart for the Boolean algebra theorems

AND	OR	XOR	XNOR
$A \cdot 0 = 0$	$A + 0 = A$	$A \oplus 0 = A$	$\overline{A \oplus 0} = \overline{A}$
$A \cdot 1 = A$	$A + 1 = 1$	$A \oplus 1 = \overline{A}$	$\overline{A \oplus 1} = A$
$A \cdot A = A$	$A + A = A$	$A \oplus A = 0$	$\overline{A \oplus A} = 1$
$A \cdot \overline{A} = 0$	$A + \overline{A} = 1$	$A \oplus \overline{A} = 1$	$\overline{A \oplus \overline{A}} = 0$
$\overline{\overline{A}} = A$		$\overline{A} \oplus \overline{A} = 0$	$\overline{\overline{A} \oplus \overline{A}} = 1$

Review Questions

Review question set 9