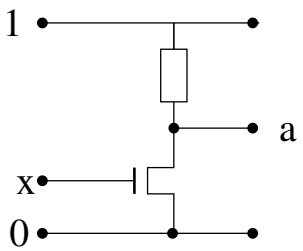
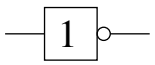
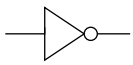
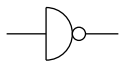
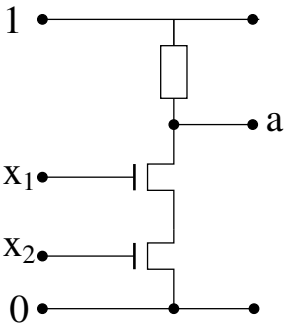
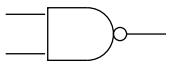
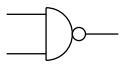
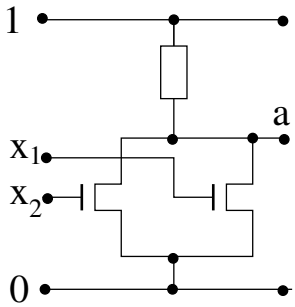
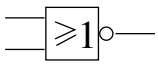
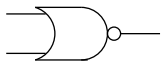
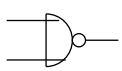
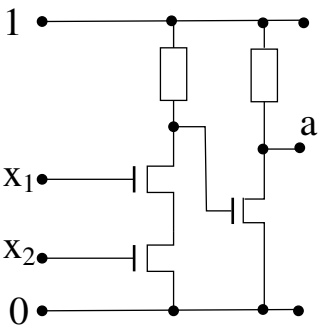
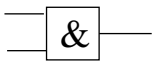
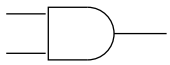
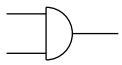
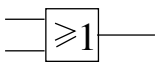
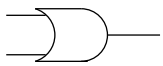
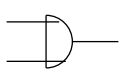
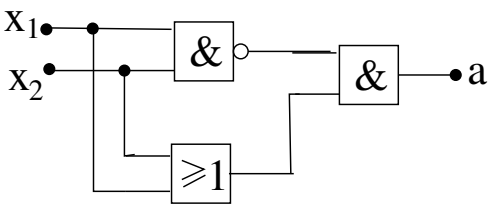
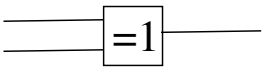
Schaltung	Funktion	symbolische Darstellung DIN	amerik.	alt
	Negation NOT $a = \neg x$			
	Nicht–Und NAND $a = \neg(x_1 \wedge x_2)$			
	Nicht–Oder NOR $a = \neg(x_1 \vee x_2)$			
	Und AND $a = x_1 \wedge x_2$			
Kombination von NOR und NOT	Oder OR $a = x_1 \vee x_2$			

Ein Schaltnetz für die Antivalenz EXOR



symbolisch



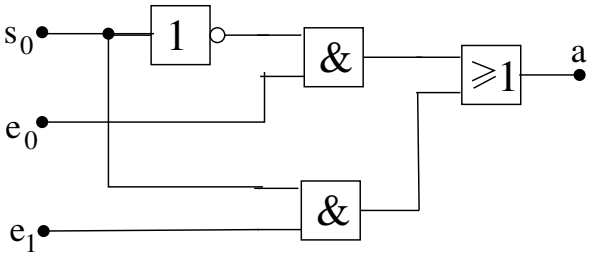
Schaltnetze für Multiplexer MUX

Ein Multiplexer hat $2^n + n$ Eingänge n Steuerleitungen und 2^n Datenleitungen

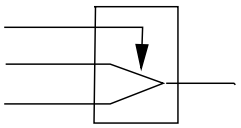
Die Eingabewerte der Steuerleitungen codieren die Nummer der Datenleitung, deren Wert ausgegeben werden soll

n = 1: Steuersignal s_0 Datensignale e_0 e_1 Ausgang a

s_0	a
0	e_0
1	e_1

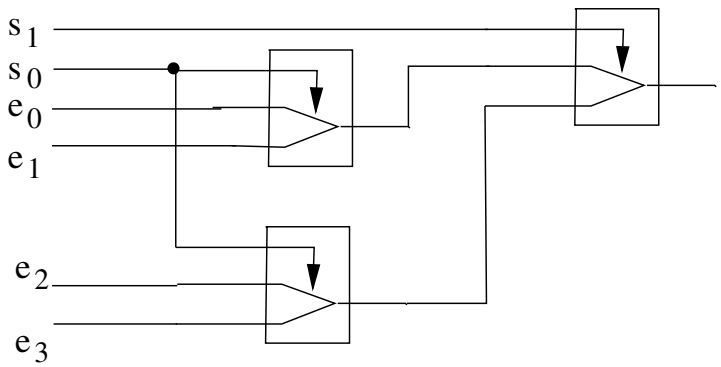


symbolisch



n = 2: Steuersignale s_0 s_1 Datensignale e_0.... e_3 Ausgang a

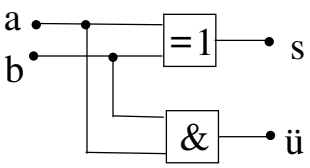
s_0	s_1	a
0	0	e_0
0	1	e_1
1	0	e_2
1	1	e_3

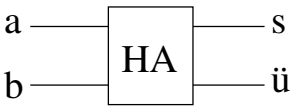


Halbaddierer und Volladdierer

1Bit−Halbaddierer berechnen Summe s und Übertrag ü

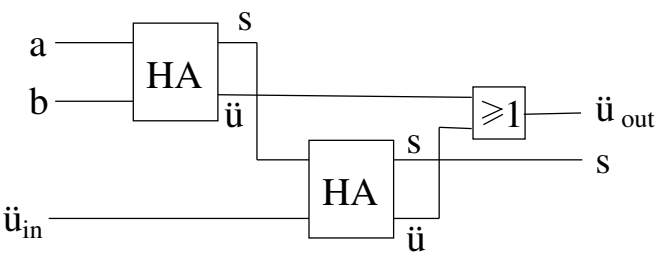
$s = a \oplus b$ (Antivalenz) $\quad ü = a \ \& \ b$

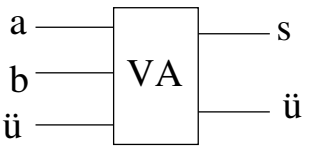




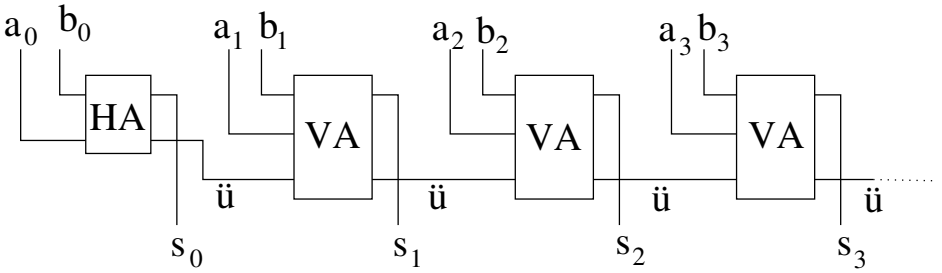
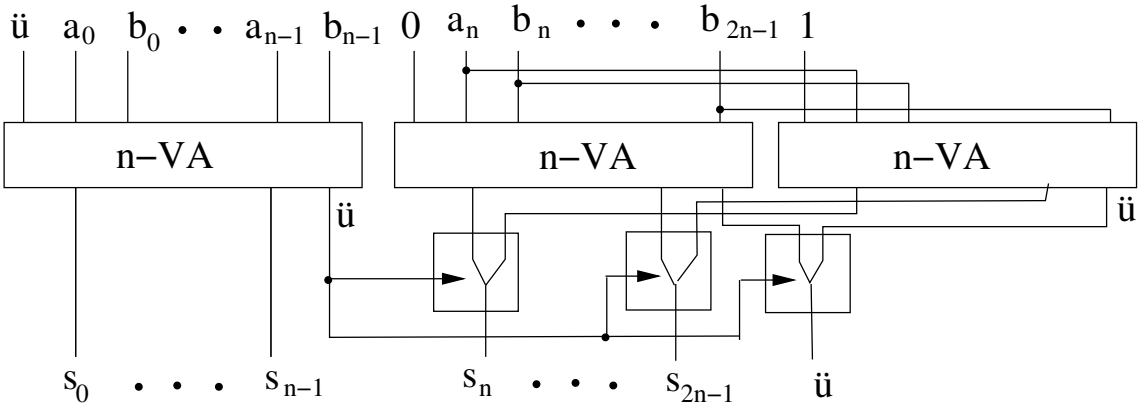
1Bit−Volladdierer beziehen in die Berechnung einen übergebenen Übertrag $ü_{in}$ ein: $\quad s = a \oplus b \oplus ü_{in}$

$ü_{out}$ = " mindestens zwei aus a, b, $ü_{in}$ "





Einfacher nBit−Addierer (Carry−ripple−Addierer)



Rekursiver Aufbau eines schnellen Carry−lookahead−Addierers