

Figure 3-19 4-to-1-Line Multiplexer

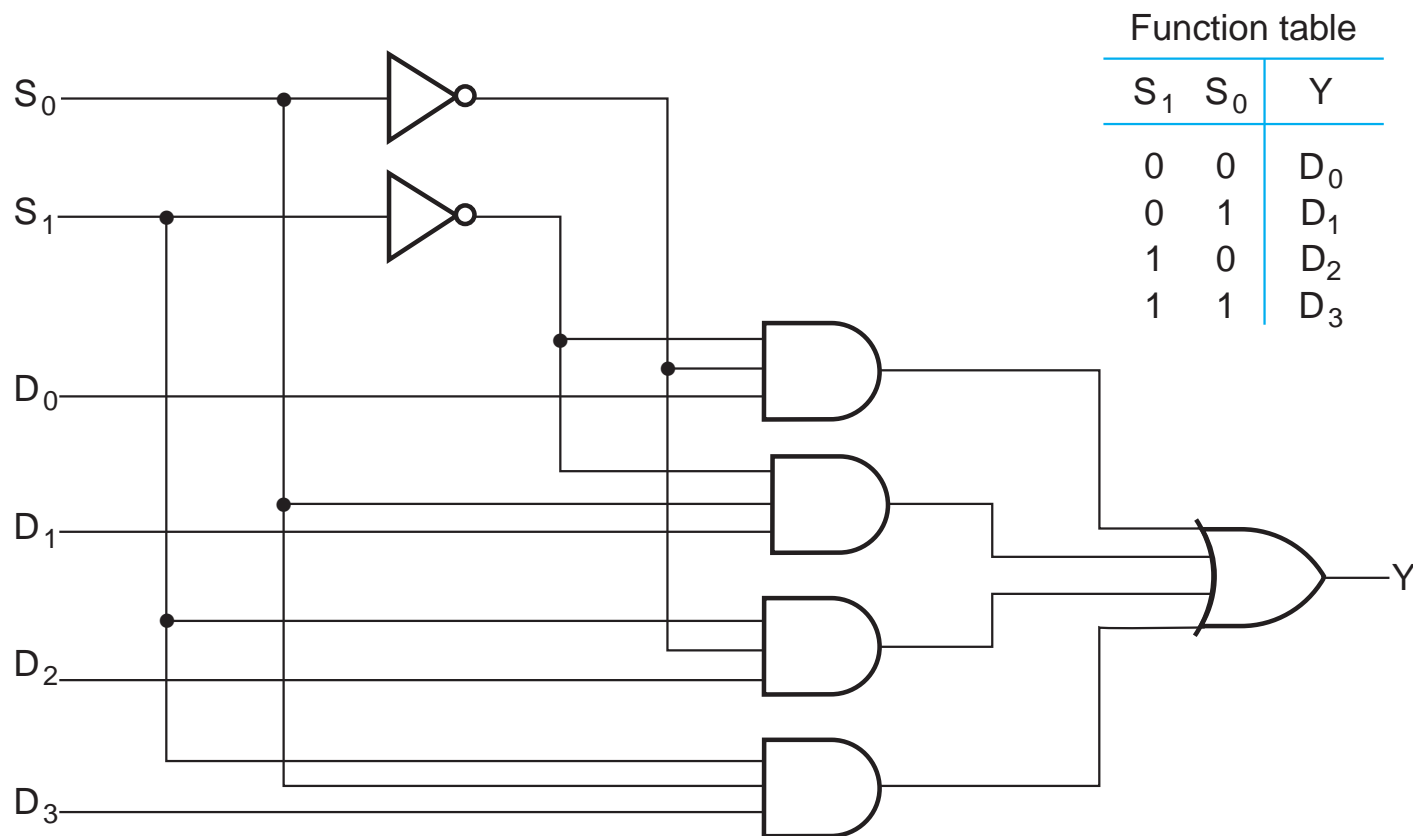


Figure 3-21 Quadruple 2-to-1-Line Multiplexer

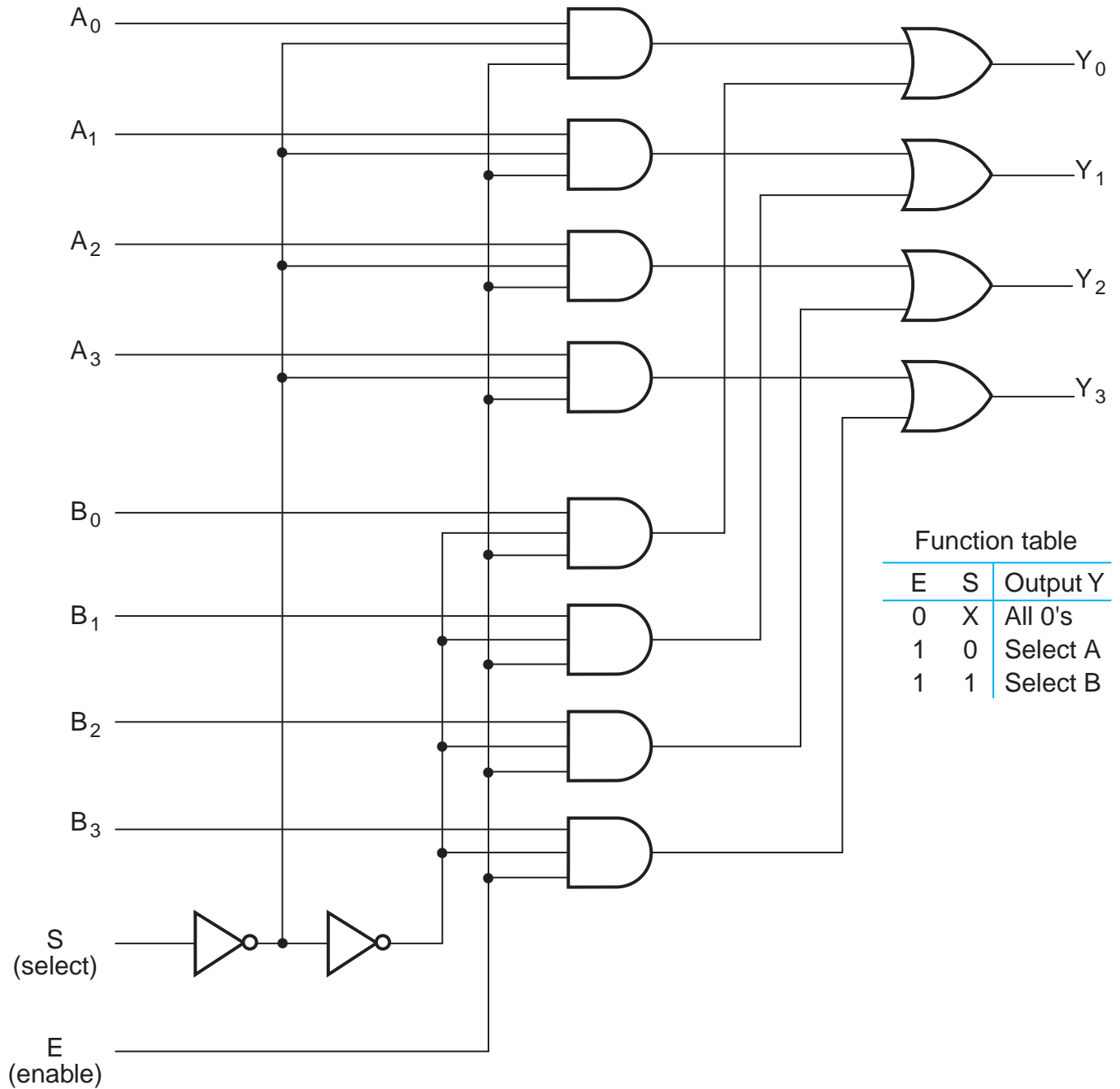
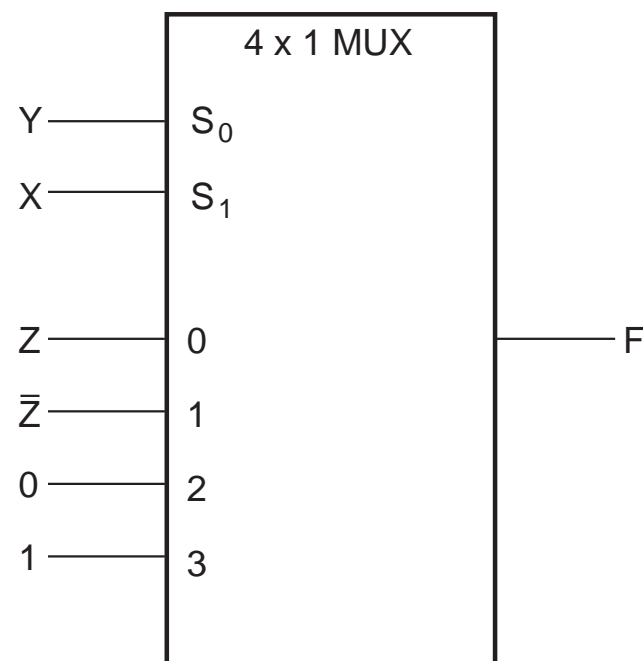


Figure 3-22 Implementing a Boolean Function with a Multiplexer

X	Y	Z	F	
0	0	0	0	$F = Z$
0	0	1	1	
0	1	0	1	$F = \bar{Z}$
0	1	1	0	
1	0	0	0	$F = 0$
1	0	1	0	
1	1	0	1	$F = 1$
1	1	1	1	

(a) Truth table



(b) Multiplexer implementation

Figure 3-23 Implementing a Four-Input Function with a Multiplexer

A	B	C	D	F	
0	0	0	0	0	$F = D$
0	0	0	1	1	
0	0	1	0	0	$F = D$
0	0	1	1	1	
0	1	0	0	1	$F = \bar{D}$
0	1	0	1	0	
0	1	1	0	0	$F = 0$
0	1	1	1	0	
1	0	0	0	0	$F = 0$
1	0	0	1	0	
1	0	1	0	0	$F = D$
1	0	1	1	1	
1	1	0	0	1	$F = 1$
1	1	0	1	1	
1	1	1	0	1	$F = 1$
1	1	1	1	1	

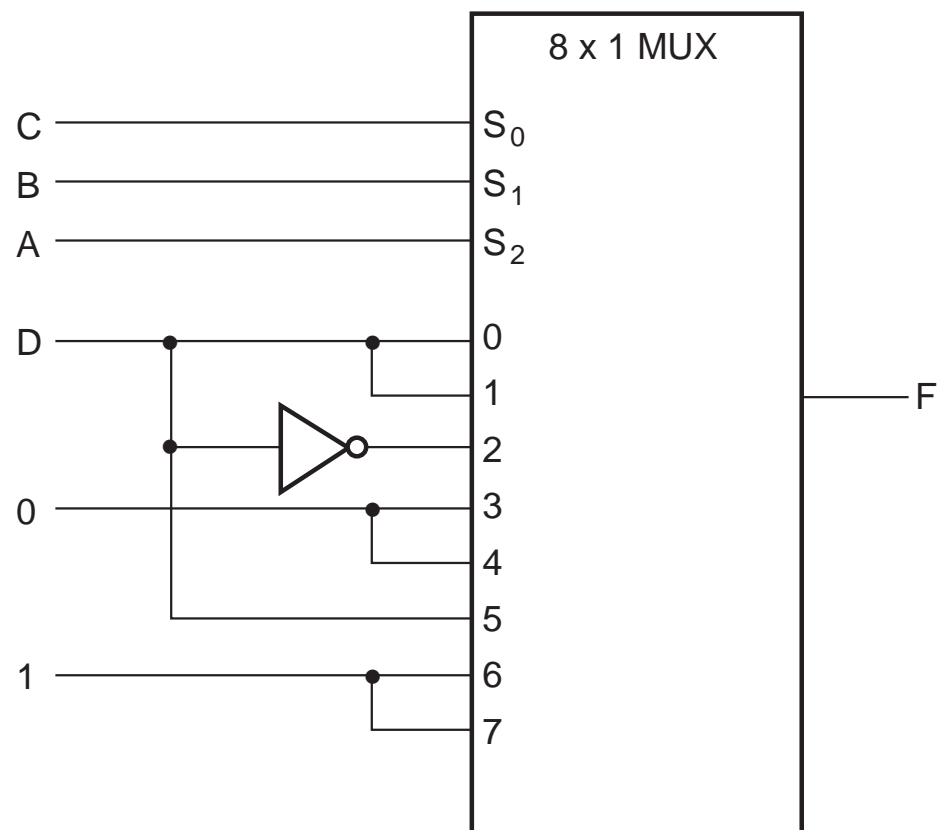


Figure 3-24 1-to-4-Line Demultiplexer

