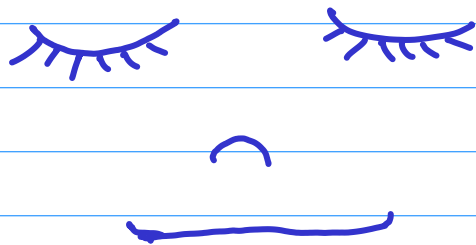


MAC 0329

(04/junho/2020)



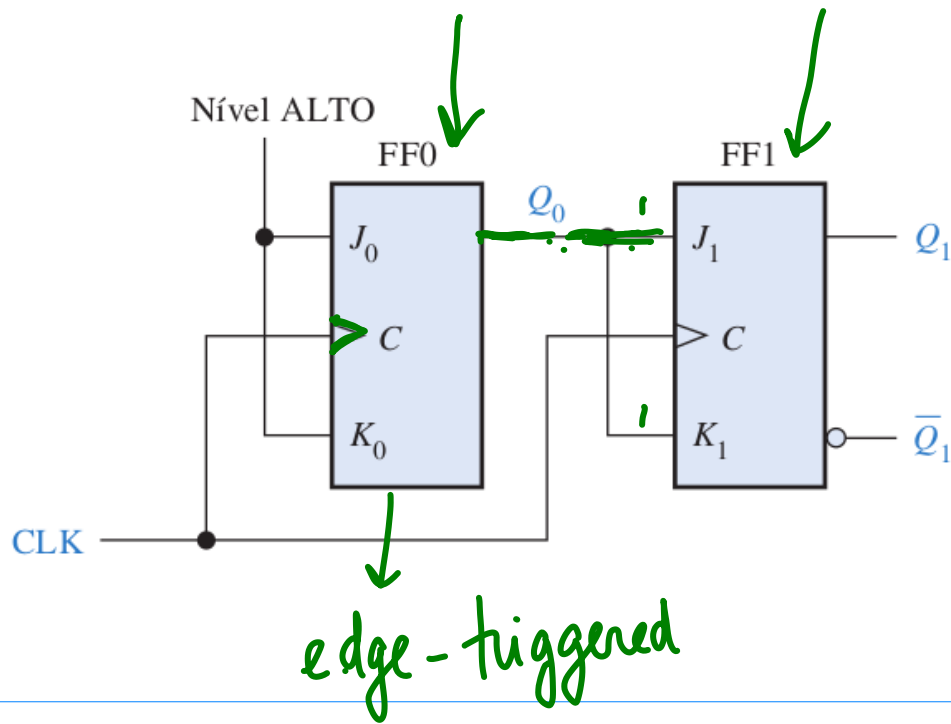
Bom dia!

Contadores

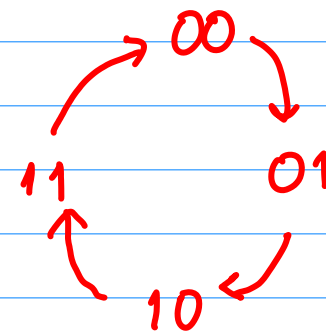
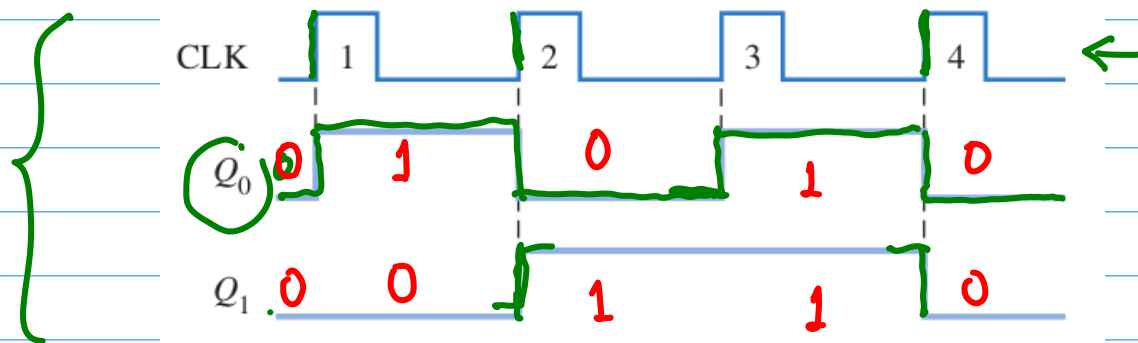
- síncronos

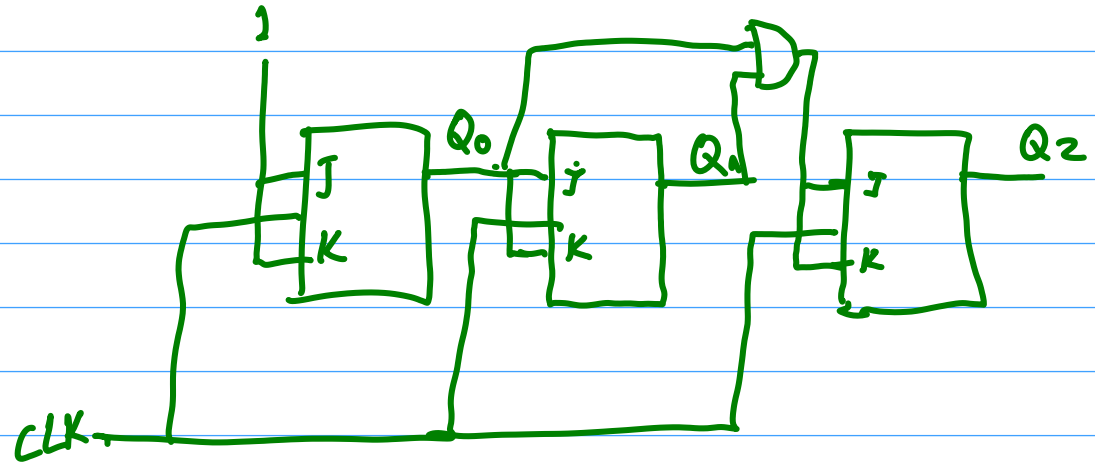
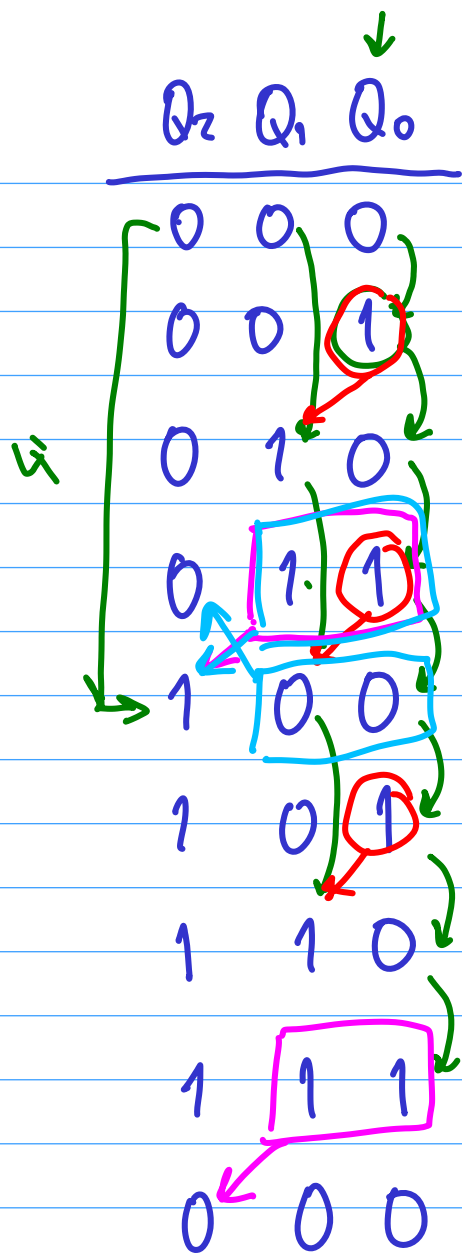
- asíncronos

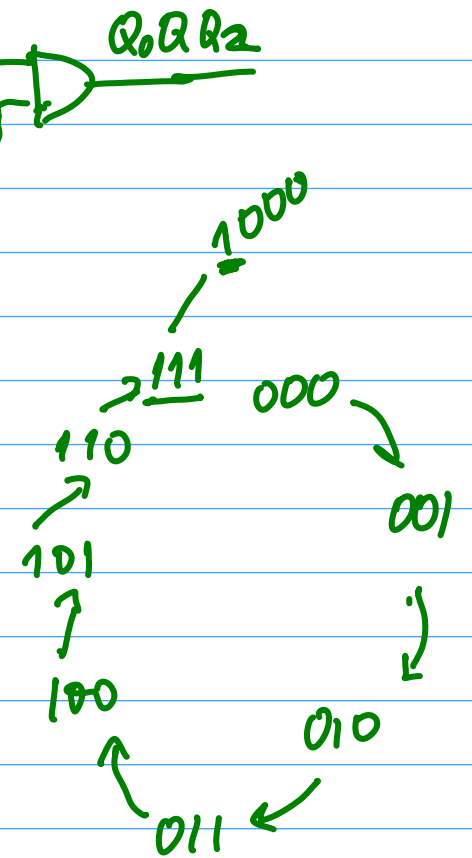
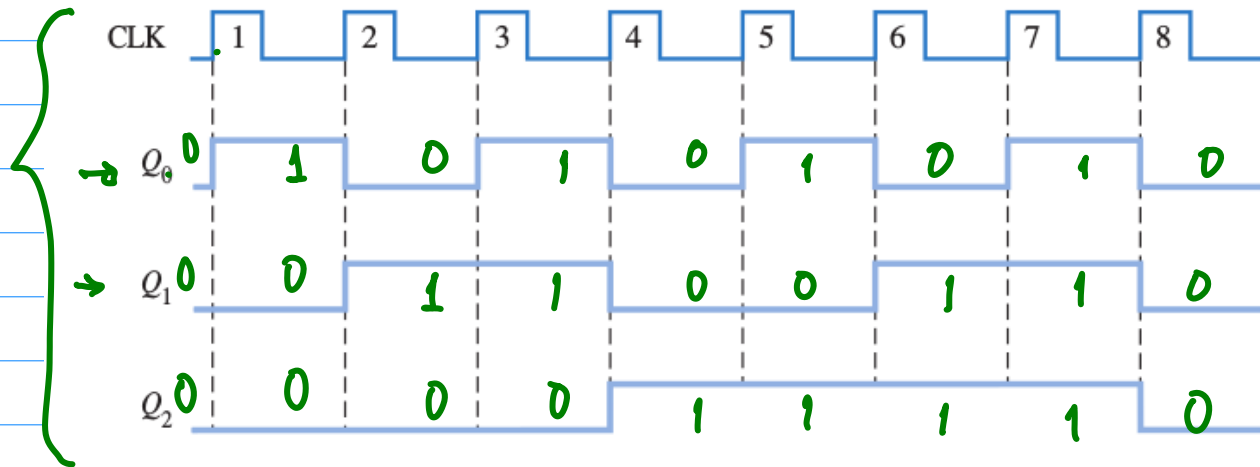
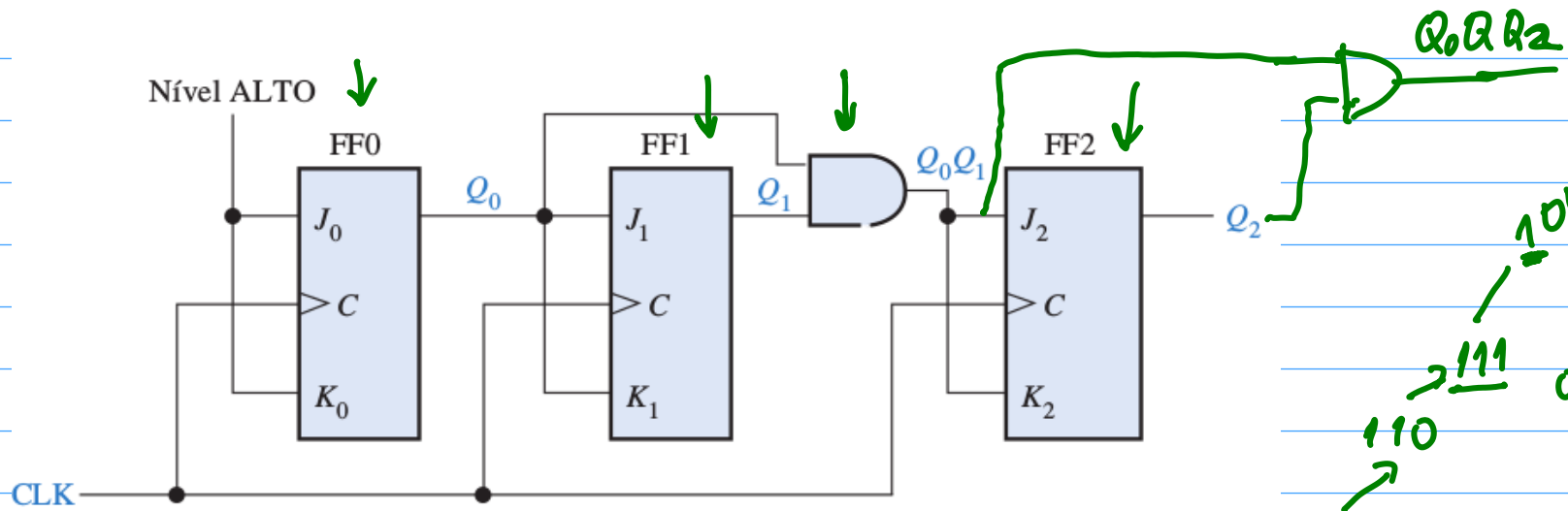
Registradores

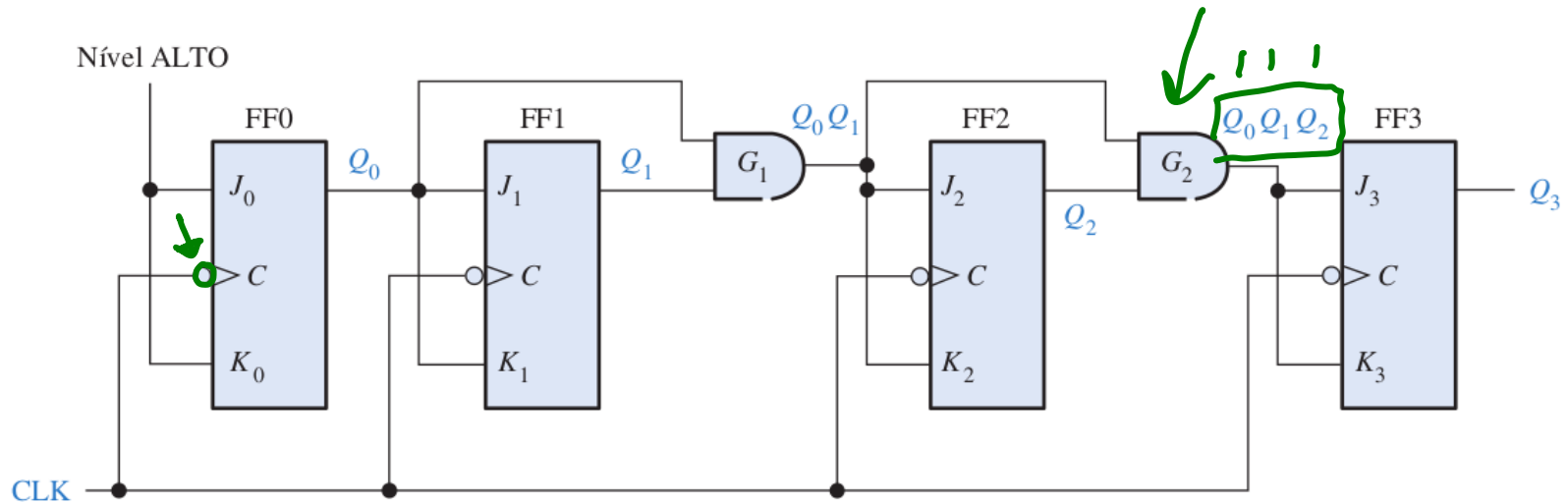


J	K	Q	Q^*	
0	0	0	0	mantém
0	0	1	1	
0	1	0	0	reset
0	1	1	0	
1	0	0	1	set
1	0	1	1	
1	1	0	1	inverte
1	1	1	0	

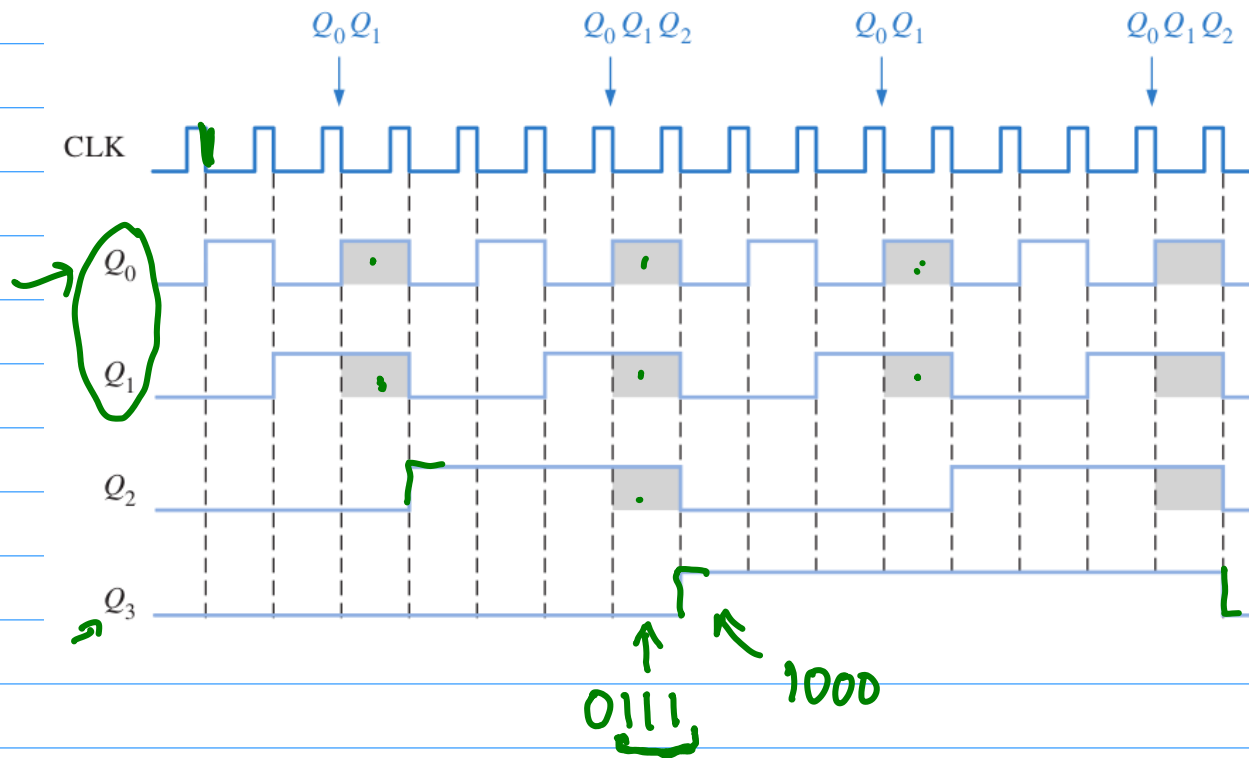




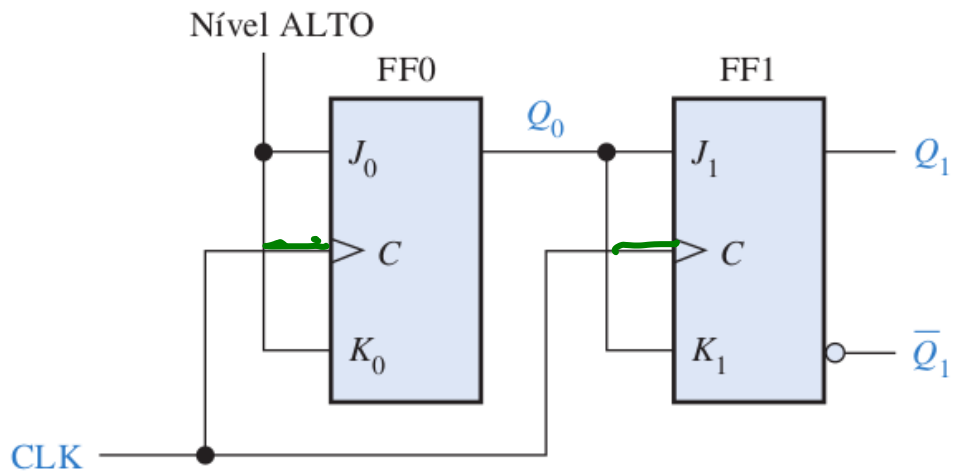




(a)

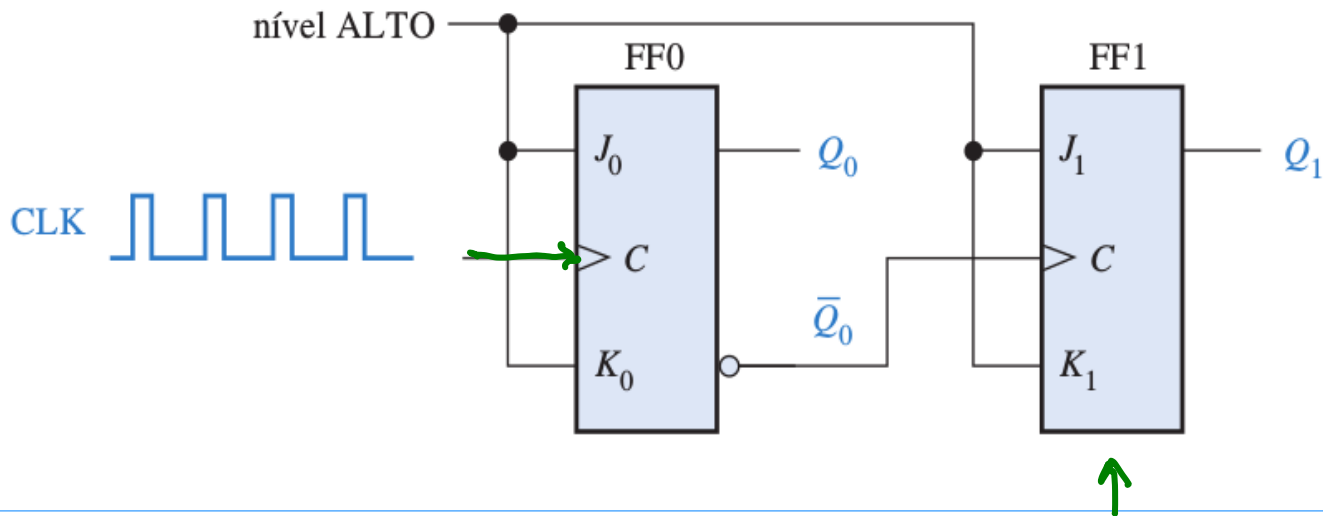


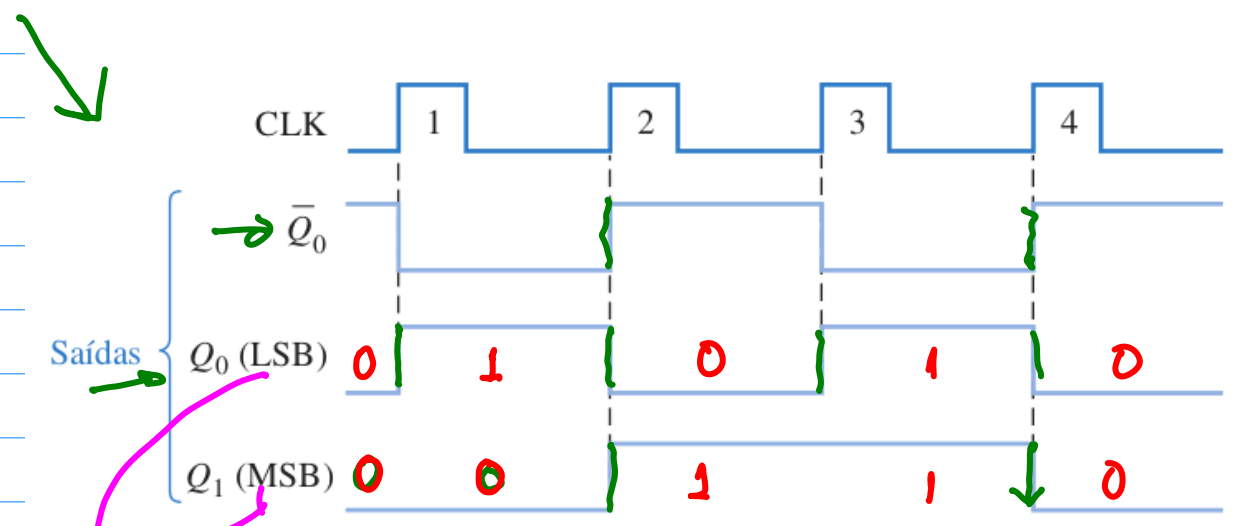
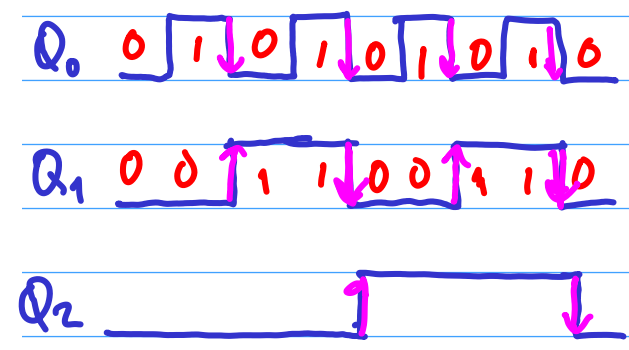
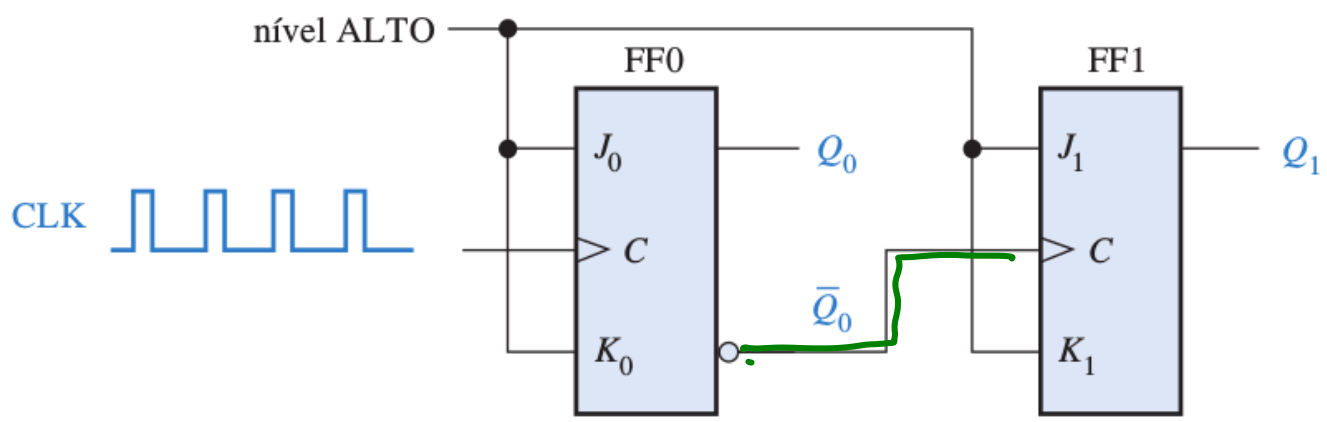
Síncrono



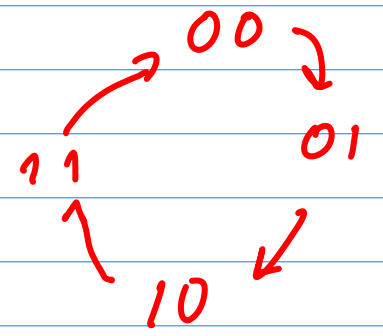
← contador 2 bits
síncrono

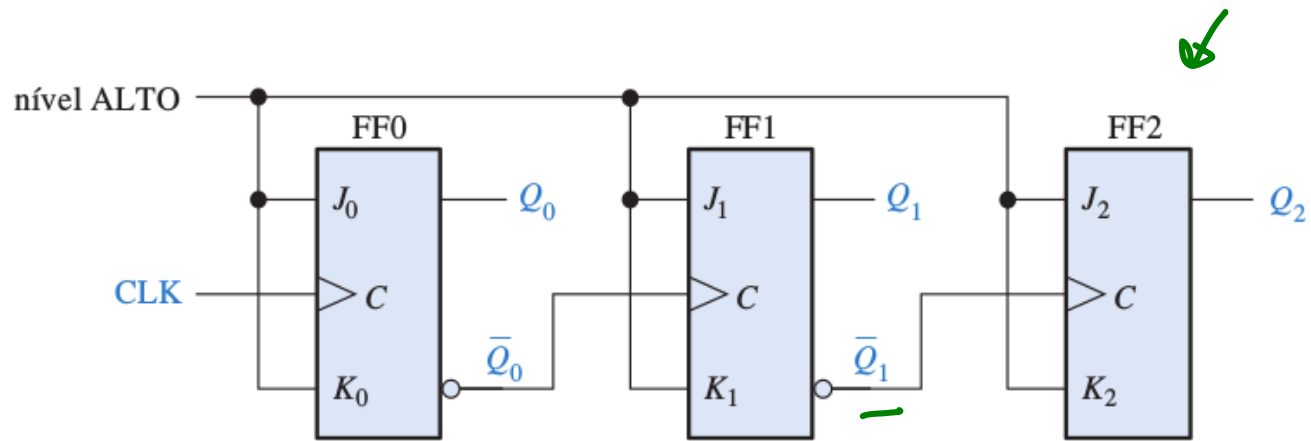
← contador 2 bits
asíncrono



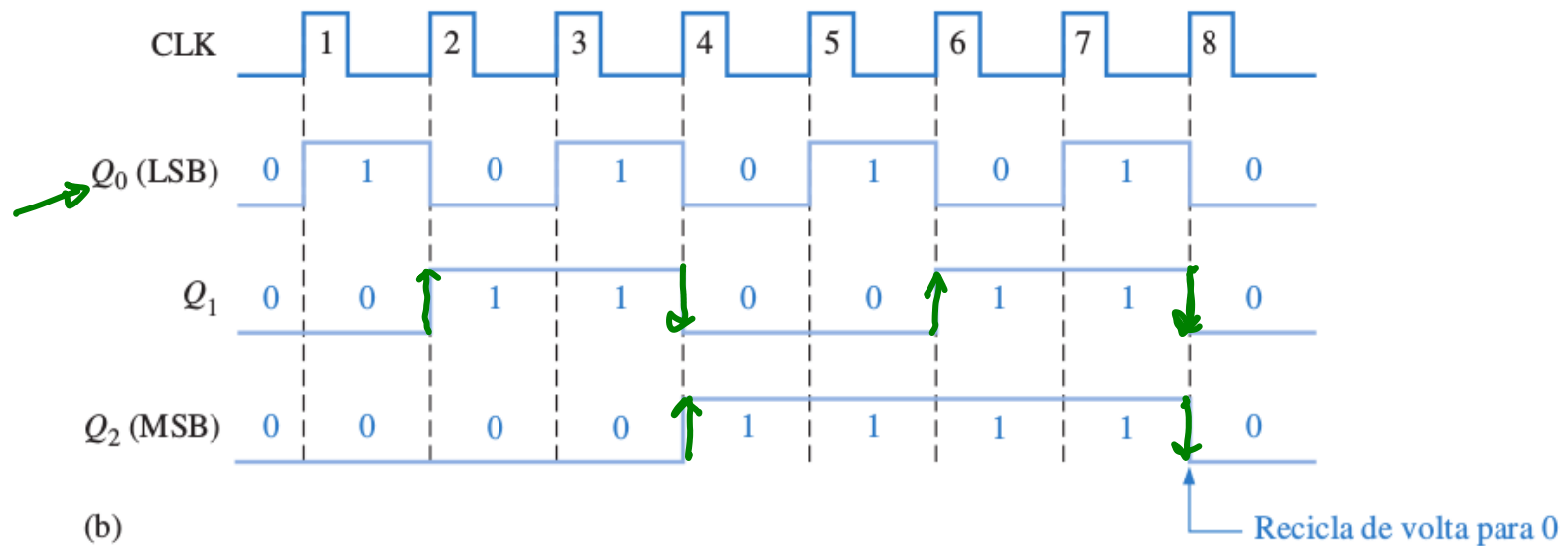


least significant bit
most

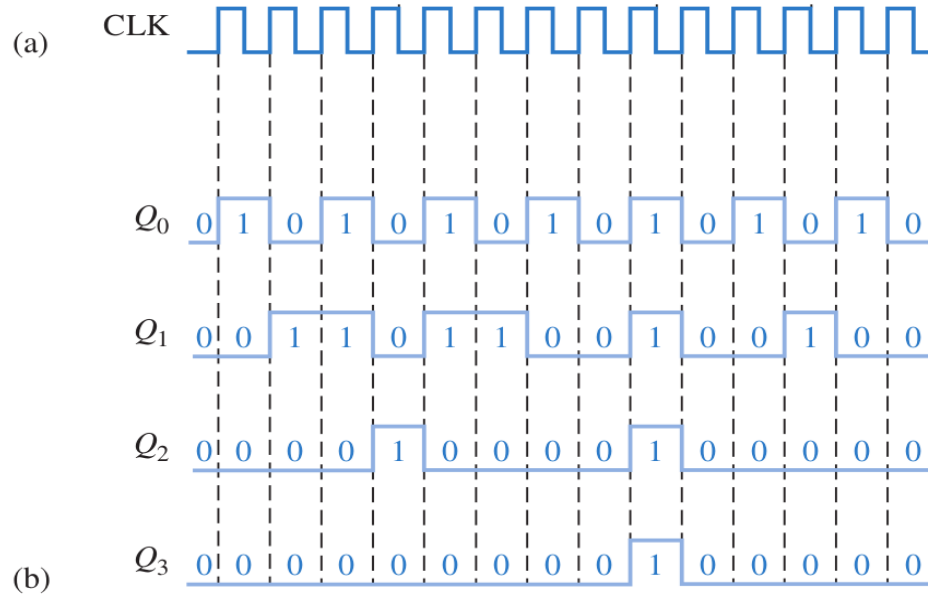
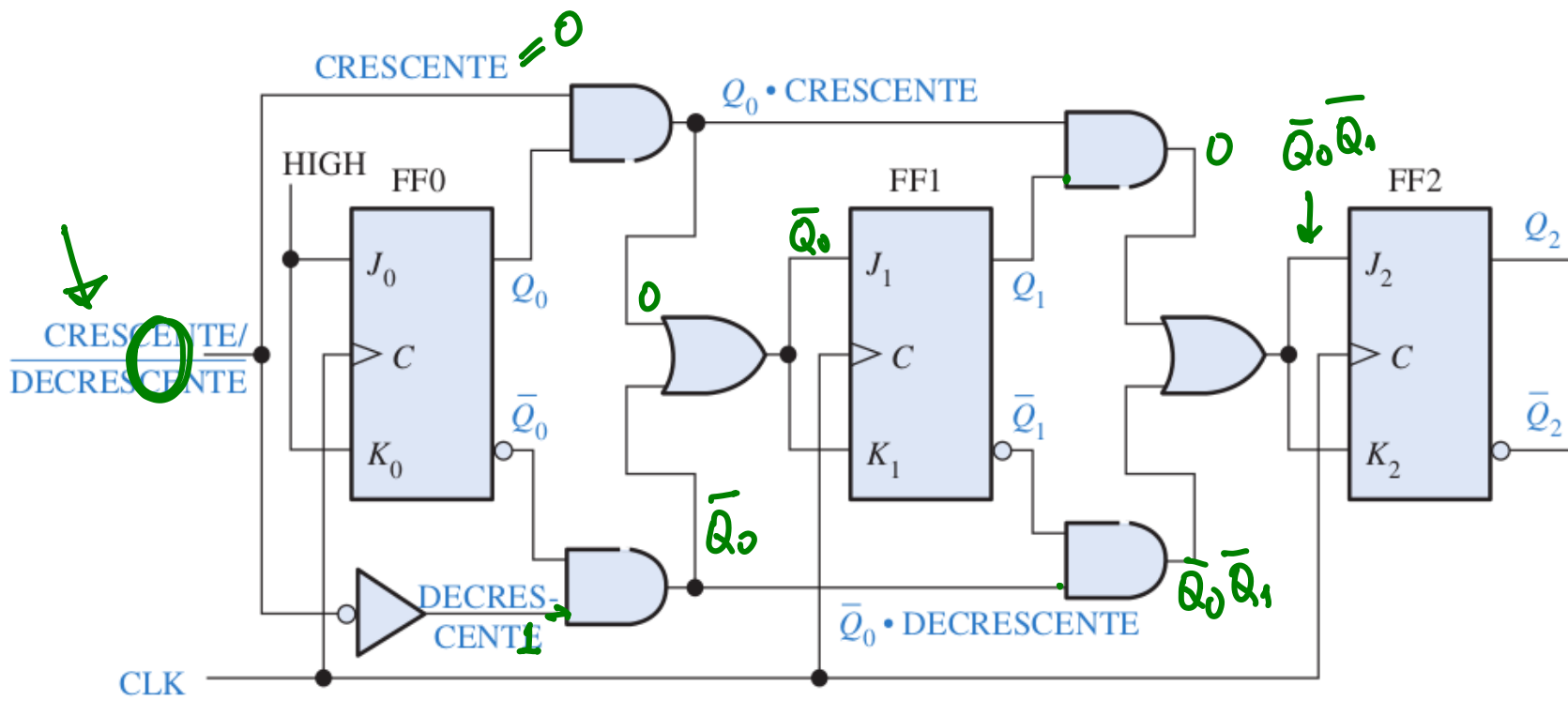




(a)

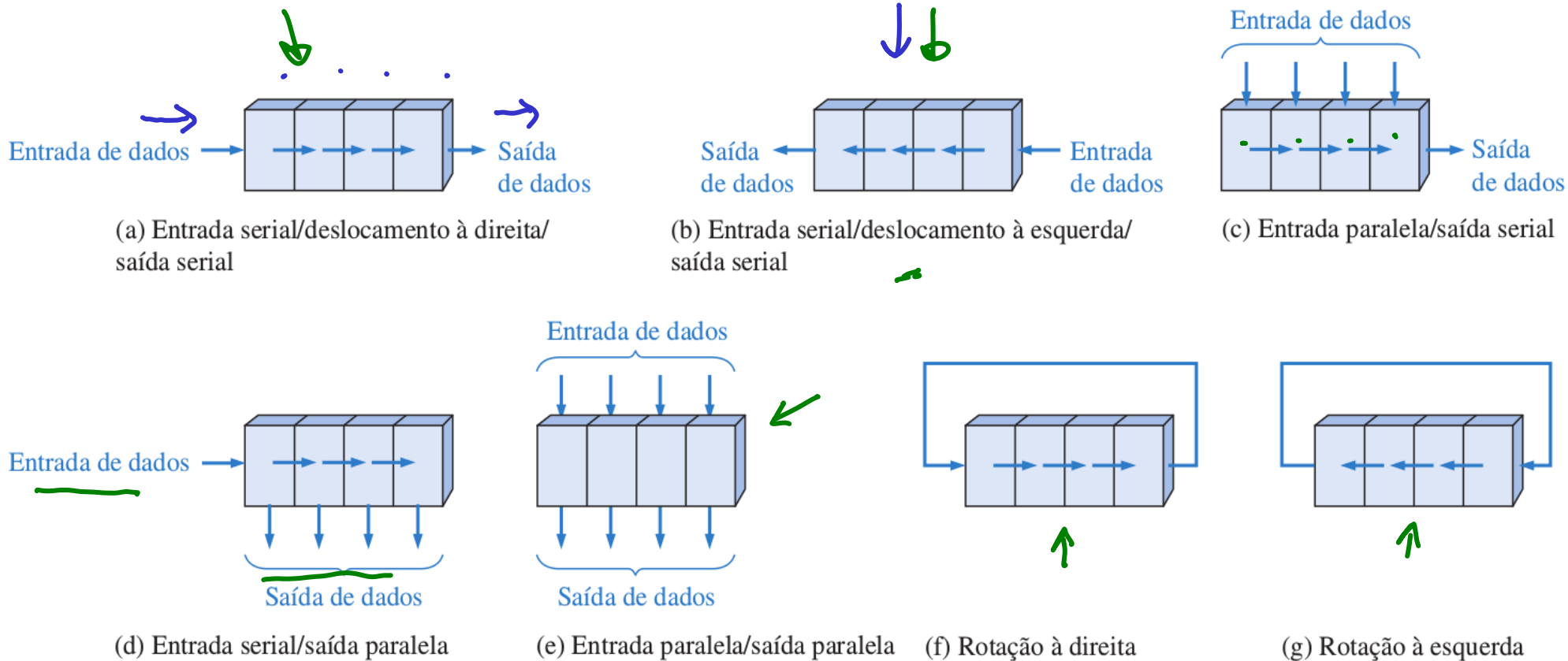


(b)



Registradores

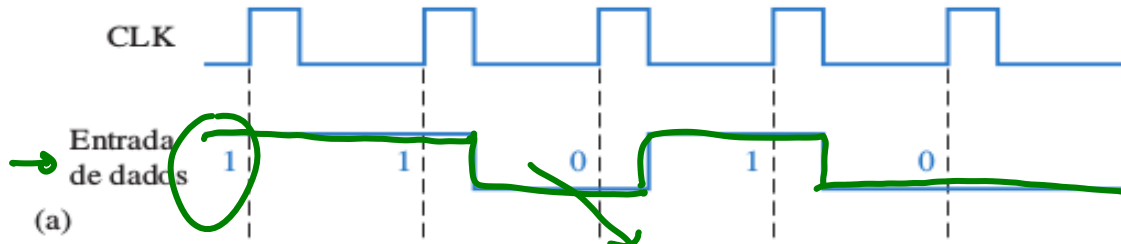
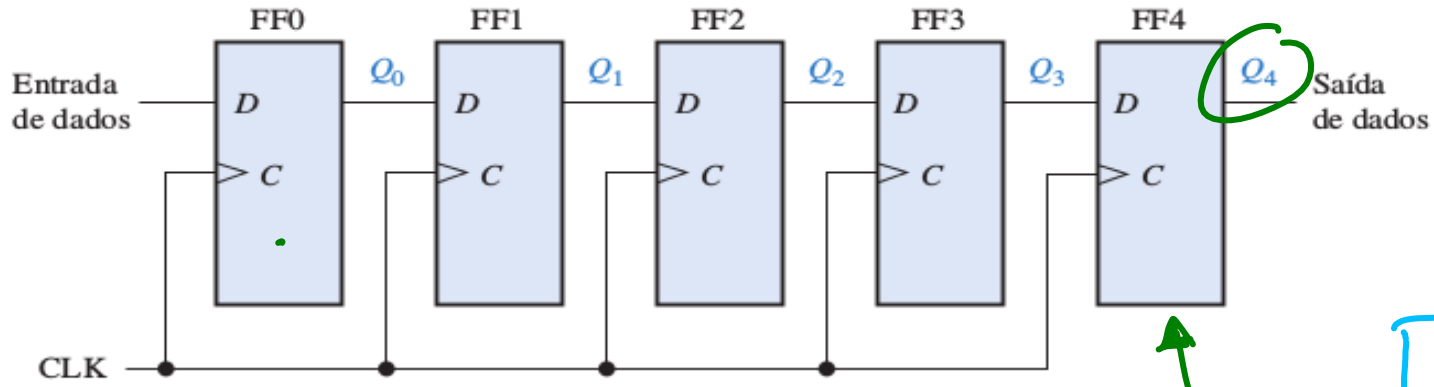
$$\begin{array}{r} 011 = 3_{(10)} \\ \underline{110} = 6_{(10)} \end{array}$$



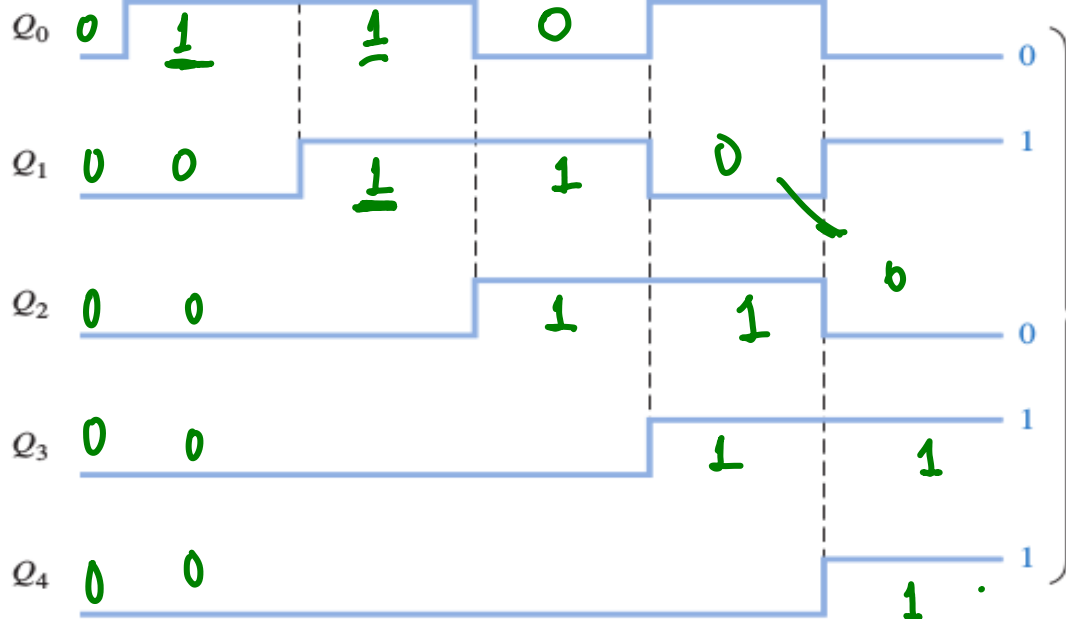
▲ FIGURA 9-2

Movimentos básicos de dados em registradores de deslocamento. (São usados quatro bits como ilustração. Os bits se movem na direção das setas.)

Entrada serial
Saída serial

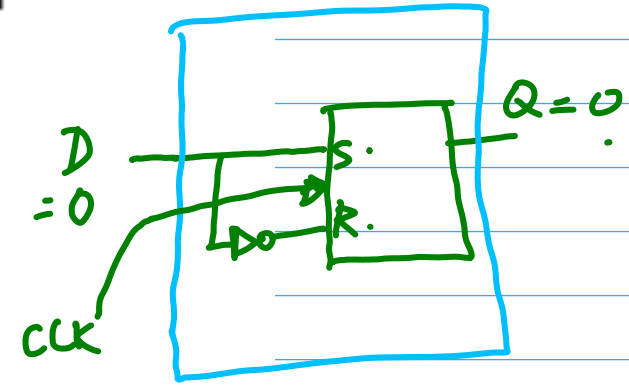


(a)

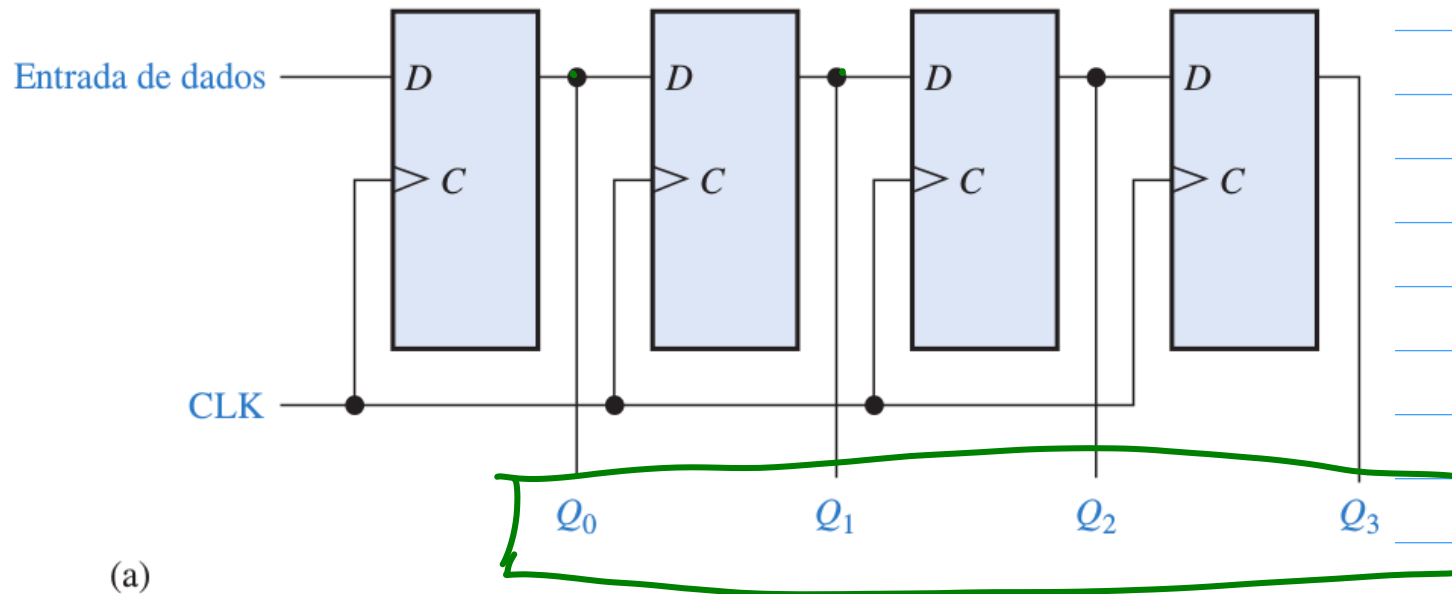


(b)

Bits de dados armazenados após cinco pulsos de clock

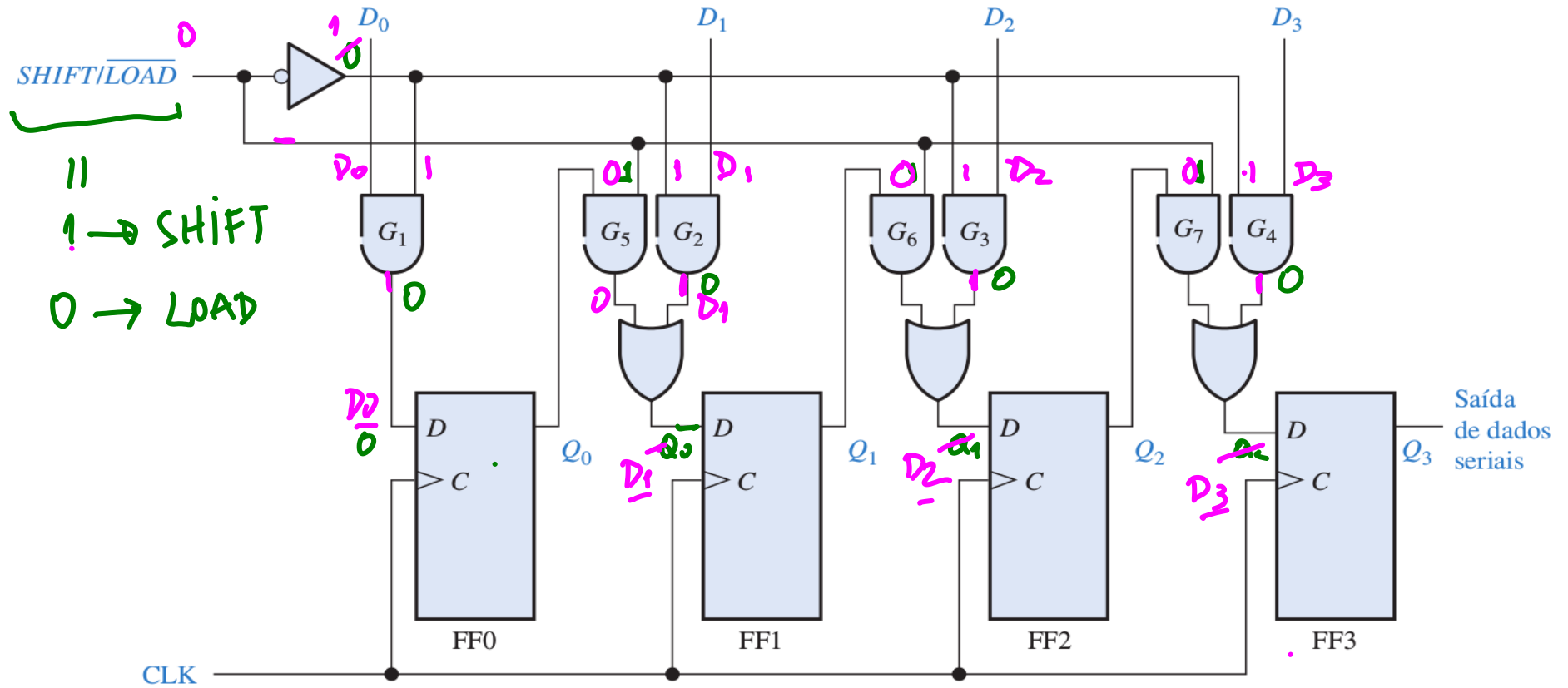


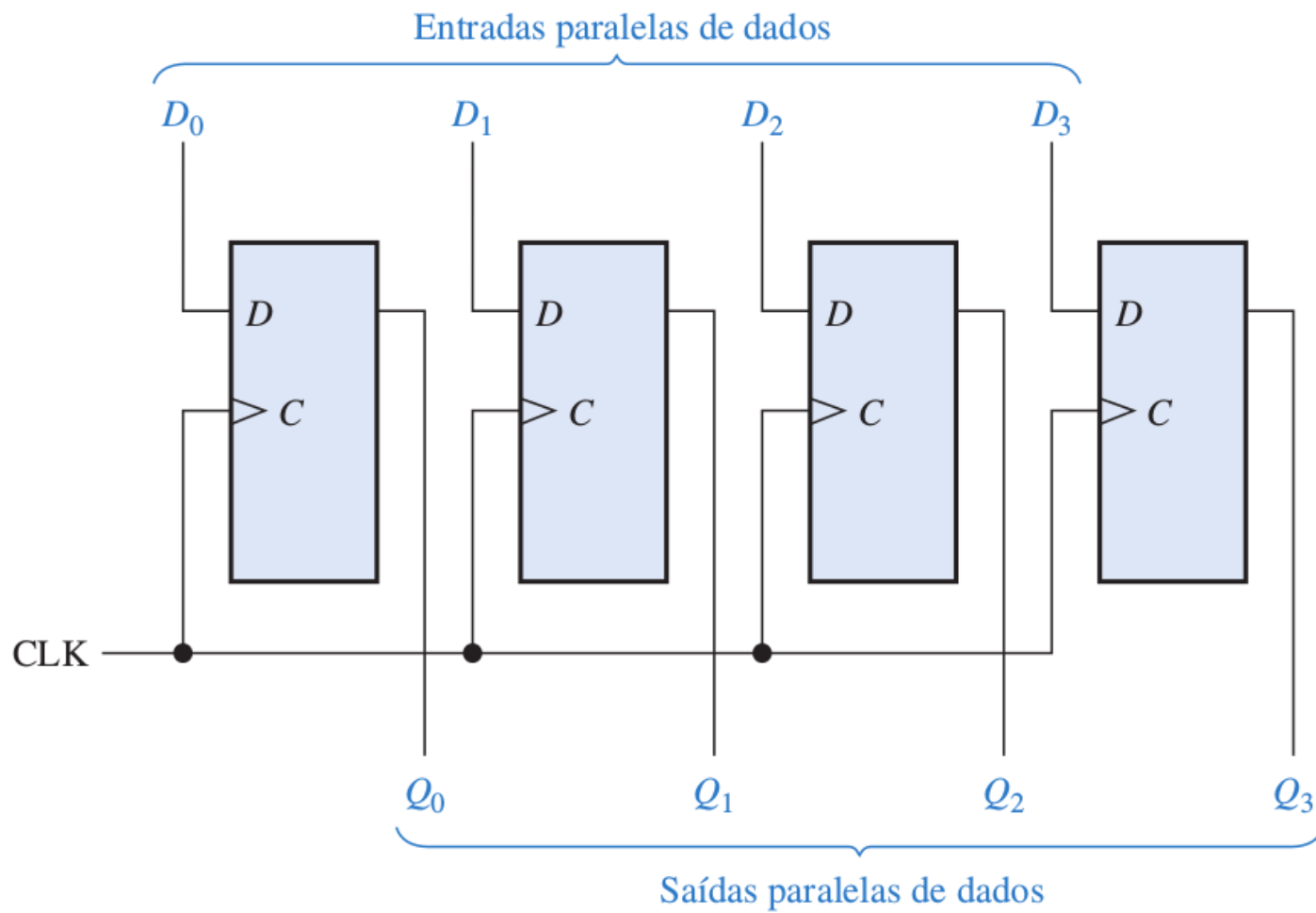
Entrada serial / saída paralela



(a)

Entrada paralela / saída serial

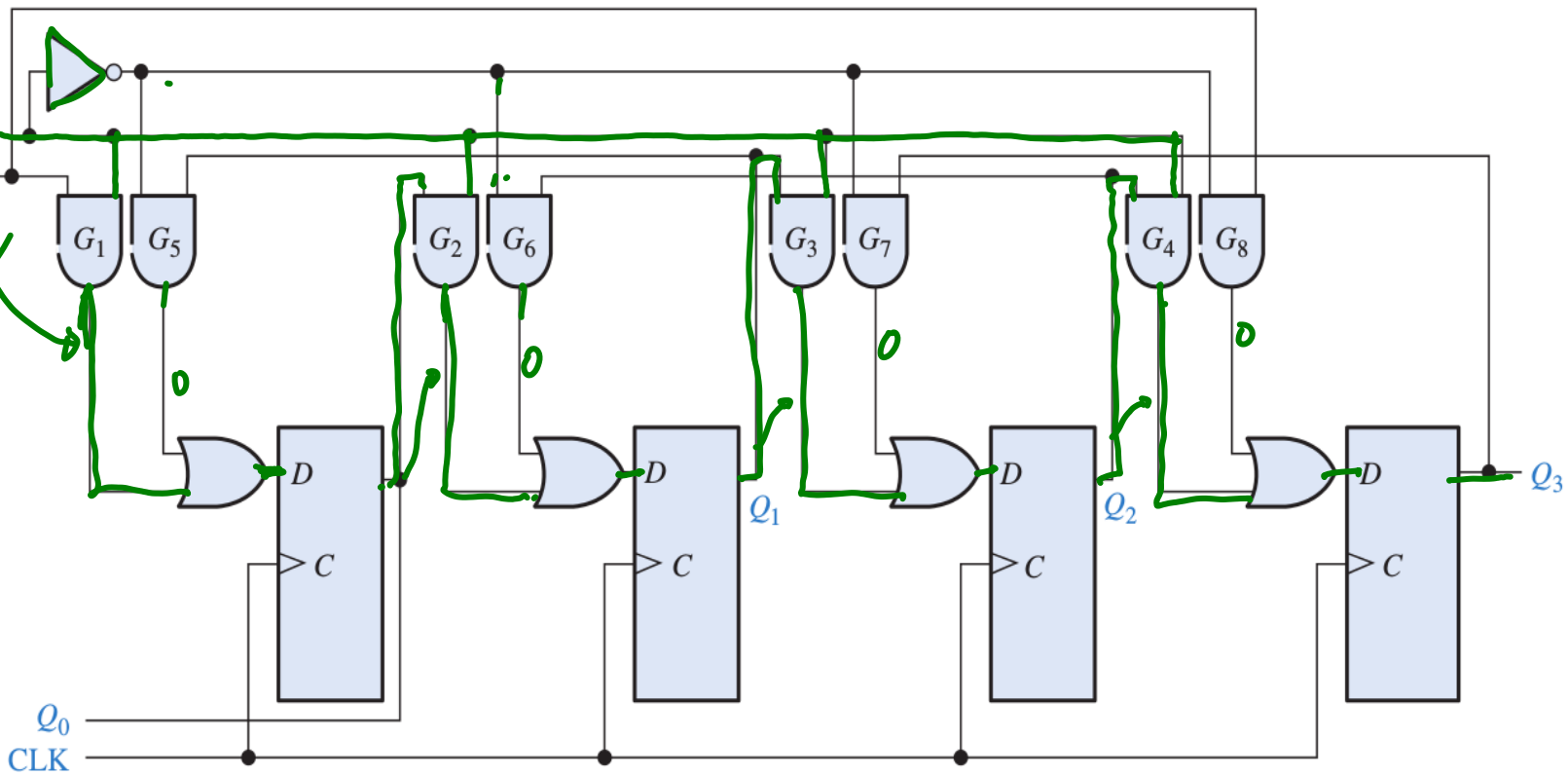




1 → RIGHT

RIGHT/LEFT

Entrada serial de datos



Q_0
CLK

Q_1

Q_2

Q_3

