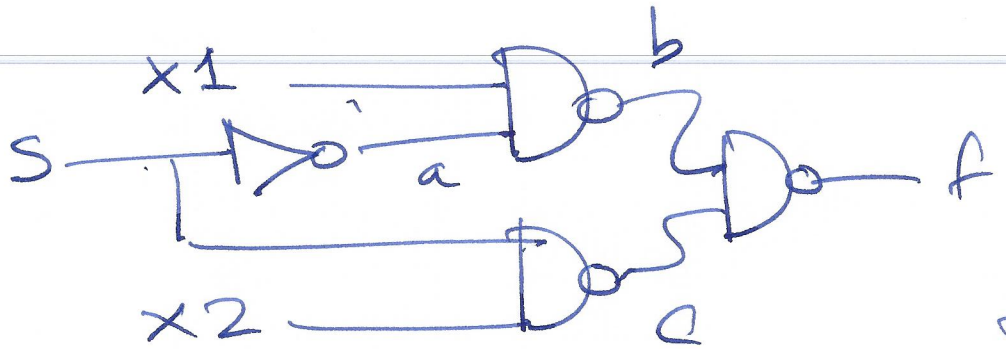
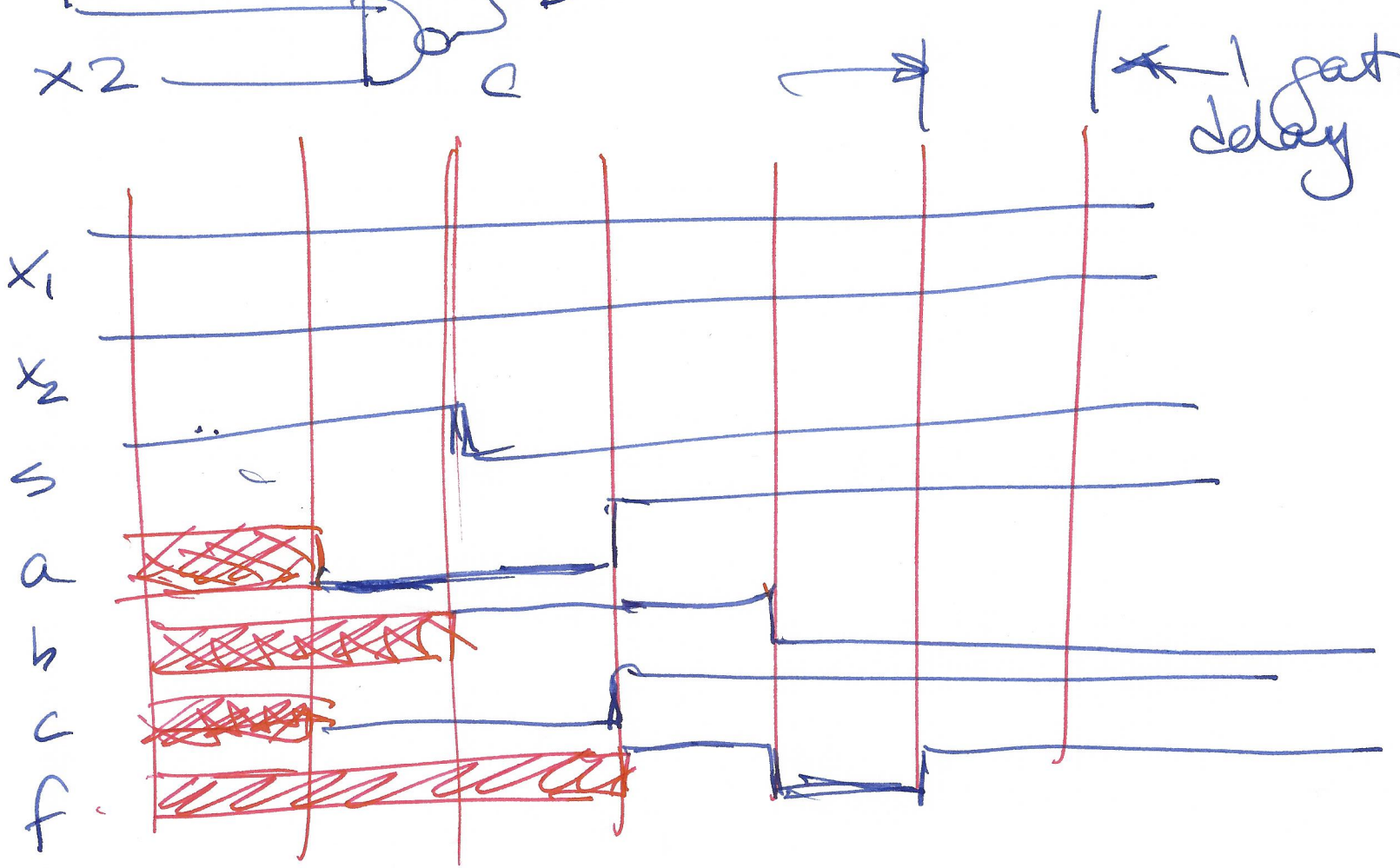
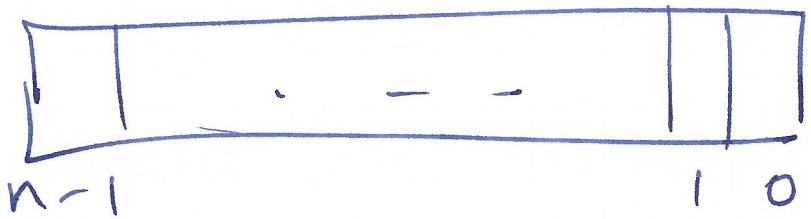
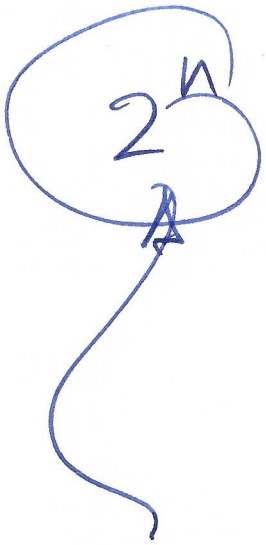
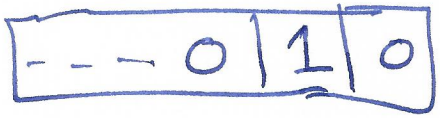

x1
s
x2
a
b
c
f

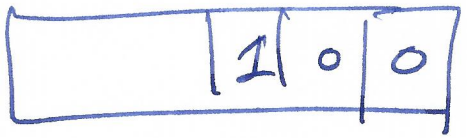

1 gate delay
x1
x2
s
a
b
c
f





$2^0 =$ 

$2^1 =$ 

$2^2 =$ 

2^n = 1 followed by n 0's

$2^n \pm 1 =$

$$\begin{array}{r} 100\ldots0 \\ -\quad\quad 1 \\ \hline 011\ldots1 \end{array}$$

0 0 0 1 = 1

↑

Sign

1 1 1 0

+ 1

---

1 1 1 1 ← -1 (4 bit)

0000 0001 = 1

1111 1110

+ 1

1111 1111 ← -1 (8-bit)

n zeroes

2^n 1 00 - - - - 0

$2^n - 1$ 0 11 - - - 1

n ones

$K = (2^n - 1) - P$

$2^4 - 1$ | 1 | 1 | 1 | 1 |

$P = 0101$ 0 1 0 1

4 0 1 0