

1) Addition

$A_3 = 1$      $B_3 = 0$   
 $A_2 = 0$      $B_2 = 1$   
 $A_1 = 1$      $B_1 = 1$   
 $A_0 = 1$      $B_0 = 0$

0)  $C_{in} = 0$

$$\begin{array}{r} +1 \\ +0 \\ \hline 1 \end{array} \rightarrow \begin{array}{l} S=1 \\ C_{out}=0 \end{array}$$

2)  $C_{in} = 1$

$$\begin{array}{r} +1 \\ +0 \\ \hline 0 \end{array} \begin{array}{l} S_2=0 \\ C_{out}=1 \end{array}$$

1)  $C_{in} = 0$      $S=1$

$$\begin{array}{r} +1 \\ +1 \\ \hline 1 \end{array} \begin{array}{l} C_{out}=1 \end{array}$$

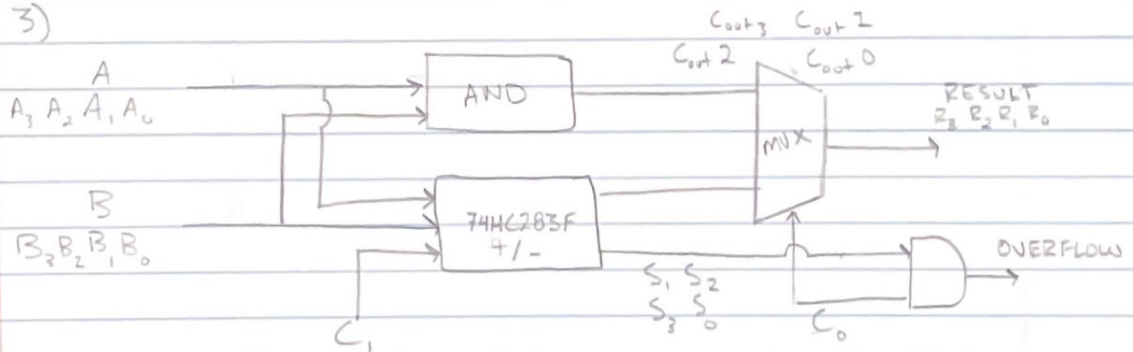
3)  $C_{in} = 1$      $S_2 = 0$

$$\begin{array}{r} +0 \\ +1 \\ \hline 0 \end{array} \begin{array}{l} C_{out}=1 \\ \text{overflow} \end{array}$$

2)

A	B	S	Y
0	0	0	0
0	1	0	0
1	0	0	1
1	1	0	1
0	0	1	0
0	1	1	1
1	0	1	0
1	1	1	1

3)



4)

$C_0$	$C_1$	OPERATION
0	0	AND
0	1	AND
1	0	OR
1	1	NOR