

Full adder :

It performs the addition of three input bits:

(1, 2) two significant bits (A and B)
3rd carry bit (C_{in}) from a

previous addition.

→ It produces two outputs:

1. Sum

2. carry

→ Multiple full adders can be cascaded to create an N-bit adder.

→ This arrangement is called ripple carry adder.

Applications - Arithmetic and Logic units

Binary addition in processors

Multipliers - digital multipliers for partial sum generation.

May

Su	Mo	Tu	We	Th	Fr	Sa
•	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	•	•	•

April 2023

Saturday 29

(119 - 246) Wk 18

08:00 Truth table:

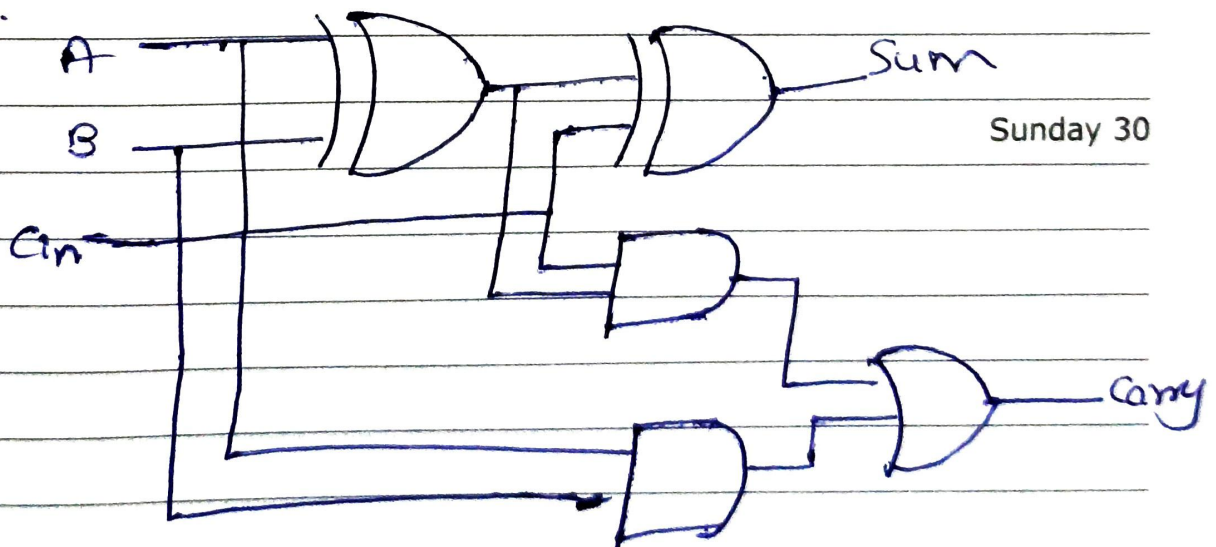
	A	B	Cin	S	C
	0	0	0	0	0
09:00	0	0	1	1	0
	0	1	0	1	0
10:00	0	1	1	0	1
	1	0	0	1	0
11:00	1	0	1	0	1
	1	1	0	0	1
12:00	1	1	1	1	1

13:00 $S = \bar{A}\bar{B}C_{in} + \bar{A}B\bar{C}_{in} + A\bar{B}\bar{C}_{in} + ABC$

14:00 $S = A \oplus B \oplus C_{in}$

15:00 $C = AB + BC_{in} + C_{in}A$

16:00 Gate level:



• He travels fastest who travels alone •