CSE Practices- Lab 2
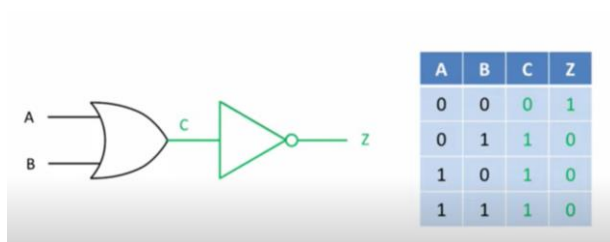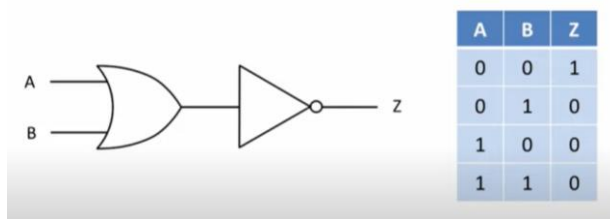
Predict Output
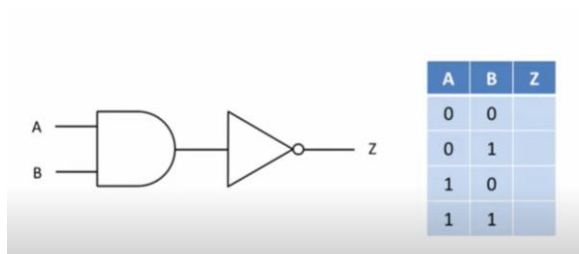
A	B	C	Z
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0

NOR

A	B	Z
0	0	1
0	1	0
1	0	0
1	1	0

1

A	B	Z
0	0	
0	1	
1	0	
1	1	

2

A	B	Z
0	0	
0	1	
1	0	
1	1	

3

A	B	C	Z
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

4

A	B	C	Z
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

5

A	B	C	D	E	Z
0	0	0			
0	0	1			
0	1	0			
0	1	1			
1	0	0			
1	0	1			
1	1	0			
1	1	1			

6

A	B	C	D	Z
0	0			
0	1			
1	0			
1	1			

7

8

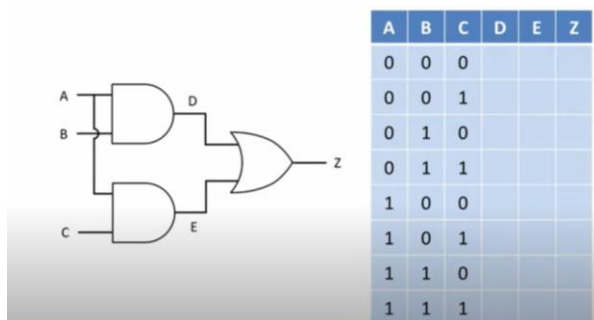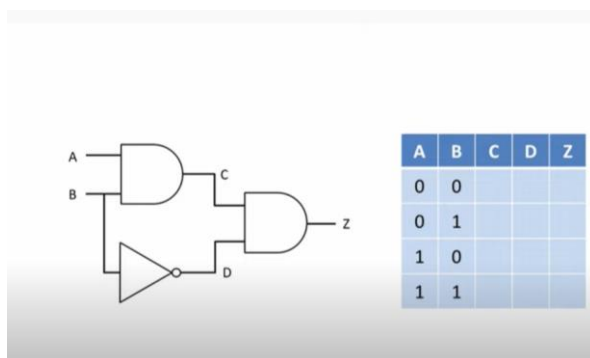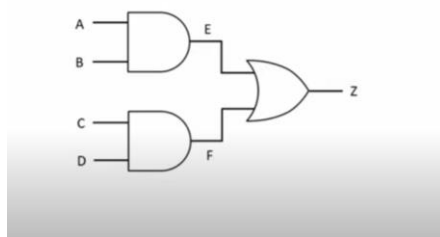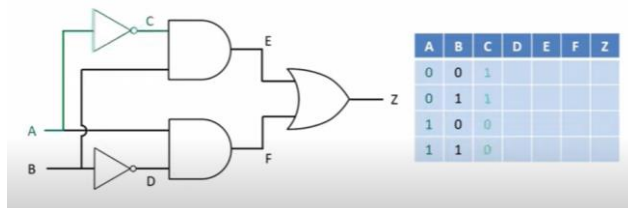| A	B	C	D	E	F	Z
0	0	1				
0	1	1				
1	0	0				
1	1	0				
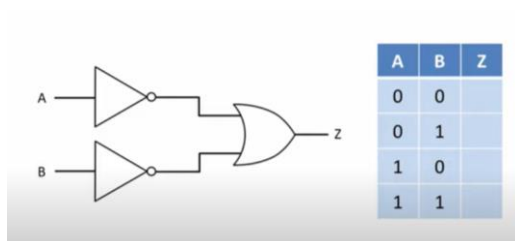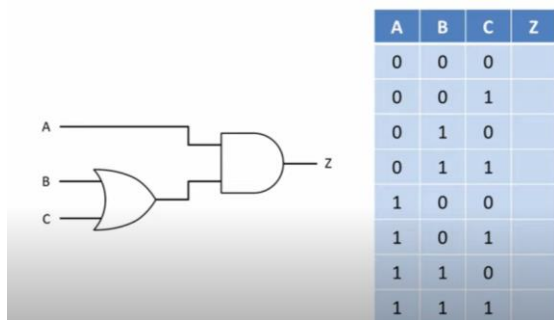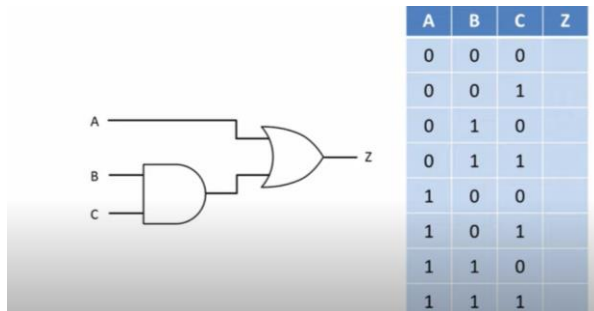
9. NAND,

10. NOR,

11. XOR

12 (1-7)

13 (1-7)

Convert Following Number to Binery/Hexadecimal

479, 789,9,1756,-8976,12549, 37.45

Hint: Convert 2.625 to binary.

We will consider the integer and fractional part separately.

The integral part is easy, 2 = 10.
For the fractional part:

0.625 × 2 = 1.25 1 Generate 1 and continue with the rest.
0.25 × 2 = 0.5   0 Generate 0 and continue.
0.5   × 2 = 1.0   1 Generate 1 and nothing remains.

14. Convert Text to ASCII (and 15. binary to ascii text)
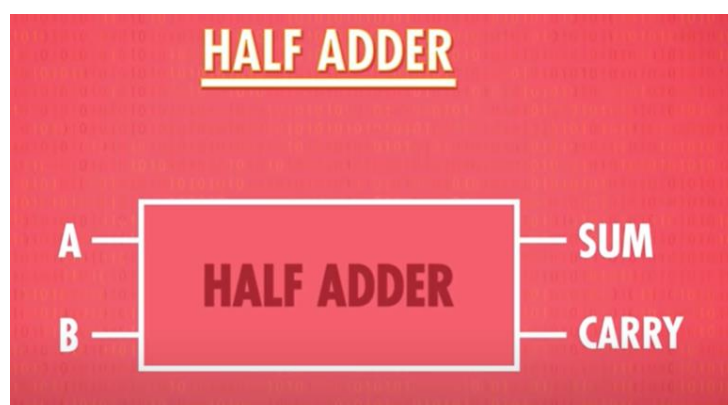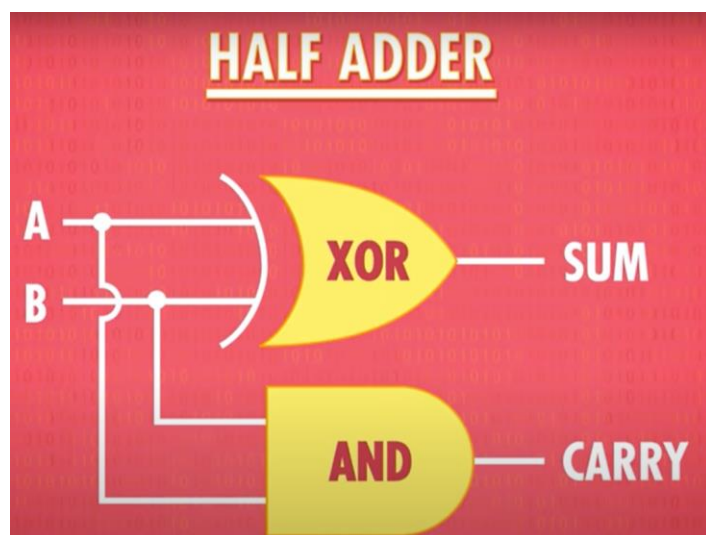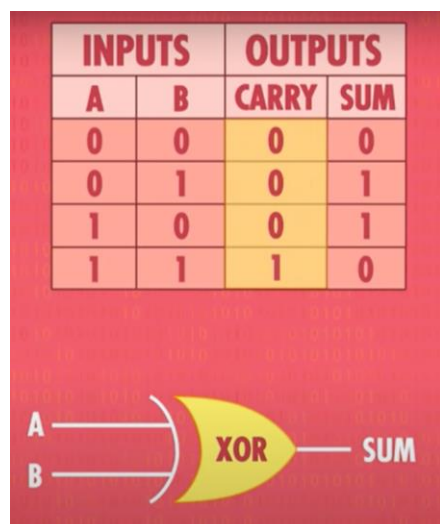
Your address

Single character,

Special characters

https://www.browserling.com/tools/text-to-ascii

https://www.binaryhexconverter.com/binary-to-ascii-text-converter

ASCII TABLE

Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char
0	0	[NULL]	32	20	[SPACE]	64	40	@	96	60	`
1	1	[START OF HEADING]	33	21	!	65	41	A	97	61	a
2	2	[START OF TEXT]	34	22	"	66	42	B	98	62	b
3	3	[END OF TEXT]	35	23	#	67	43	C	99	63	c
4	4	[END OF TRANSMISSION]	36	24	$	68	44	D	100	64	d
5	5	[ENQUIRY]	37	25	%	69	45	E	101	65	e
6	6	[ACKNOWLEDGE]	38	26	&	70	46	F	102	66	f
7	7	[BELL]	39	27	'	71	47	G	103	67	g
8	8	[BACKSPACE]	40	28	(	72	48	H	104	68	h
9	9	[HORIZONTAL TAB]	41	29	)	73	49	I	105	69	i
10	A	[LINE FEED]	42	2A	*	74	4A	J	106	6A	j
11	B	[VERTICAL TAB]	43	2B	+	75	4B	K	107	6B	k
12	C	[FORM FEED]	44	2C	,	76	4C	L	108	6C	l
13	D	[CARRIAGE RETURN]	45	2D	-	77	4D	M	109	6D	m
14	E	[SHIFT OUT]	46	2E	.	78	4E	N	110	6E	n
15	F	[SHIFT IN]	47	2F	/	79	4F	O	111	6F	o
16	10	[DATA LINK ESCAPE]	48	30	0	80	50	P	112	70	p
17	11	[DEVICE CONTROL 1]	49	31	1	81	51	Q	113	71	q
18	12	[DEVICE CONTROL 2]	50	32	2	82	52	R	114	72	r
19	13	[DEVICE CONTROL 3]	51	33	3	83	53	S	115	73	s
20	14	[DEVICE CONTROL 4]	52	34	4	84	54	T	116	74	t
21	15	[NEGATIVE ACKNOWLEDGE]	53	35	5	85	55	U	117	75	u
22	16	[SYNCHRONOUS IDLE]	54	36	6	86	56	V	118	76	v
23	17	[ENG OF TRANS. BLOCK]	55	37	7	87	57	W	119	77	w
24	18	[CANCEL]	56	38	8	88	58	X	120	78	x
25	19	[END OF MEDIUM]	57	39	9	89	59	Y	121	79	y
26	1A	[SUBSTITUTE]	58	3A	:	90	5A	Z	122	7A	z
27	1B	[ESCAPE]	59	3B	;	91	5B	[	123	7B	{
28	1C	[FILE SEPARATOR]	60	3C	<	92	5C	\	124	7C		
29	1D	[GROUP SEPARATOR]	61	3D	=	93	5D	]	125	7D	}
30	1E	[RECORD SEPARATOR]	62	3E	>	94	5E	^	126	7E	~
31	1F	[UNIT SEPARATOR]	63	3F	?	95	5F	_	127	7F	[DEL]

https://www.browserling.com/tools/text-to-ascii

16. Adder

INPUTS		OUTPUTS	
A	B	CARRY	SUM
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

A —
B —
XOR — SUM

HALF ADDER

A
B

XOR — SUM

AND — CARRY

HALF ADDER

A — HALF ADDER — SUM

B — — CARRY

FULL ADDER TABLE

A	B	C	CARRY	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
1	0	0	0	1
0	1	1	1	0
1	1	0	1	0
1	1	1	1	1

BUILDING A FULL ADDER
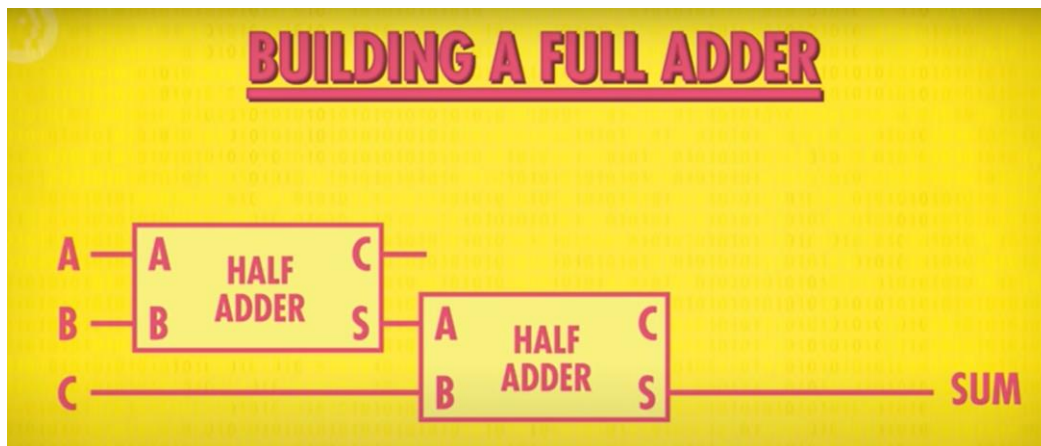
Built 4, 6, 8 bit full adder

17. Build Subtractor