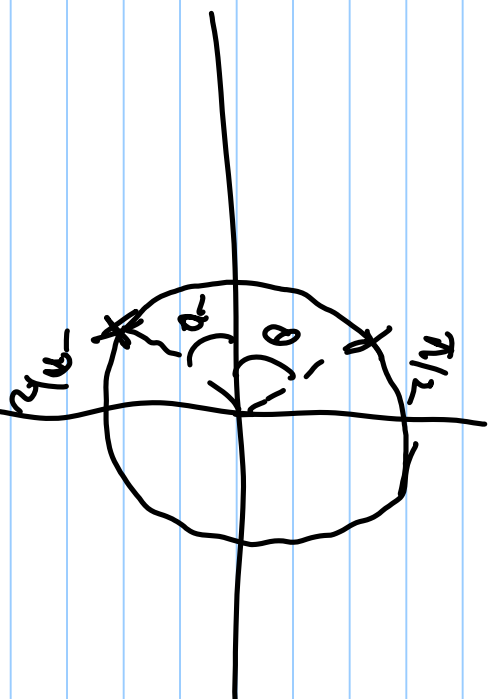
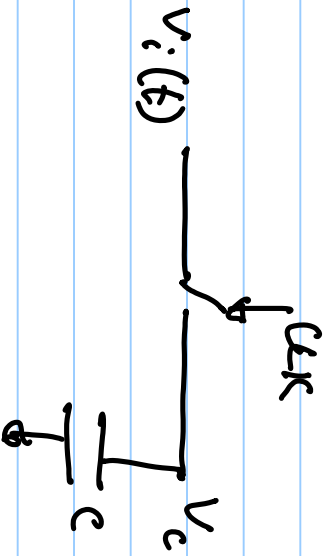
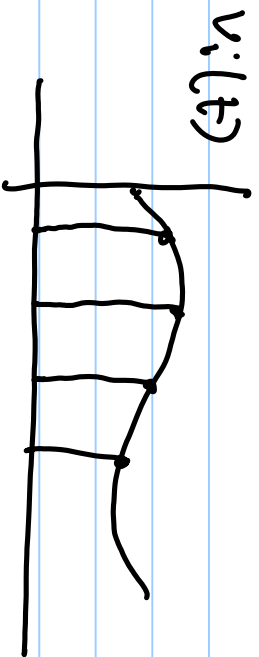


$$\theta = \frac{2\text{LC} + 1}{2N} - \pi/2$$

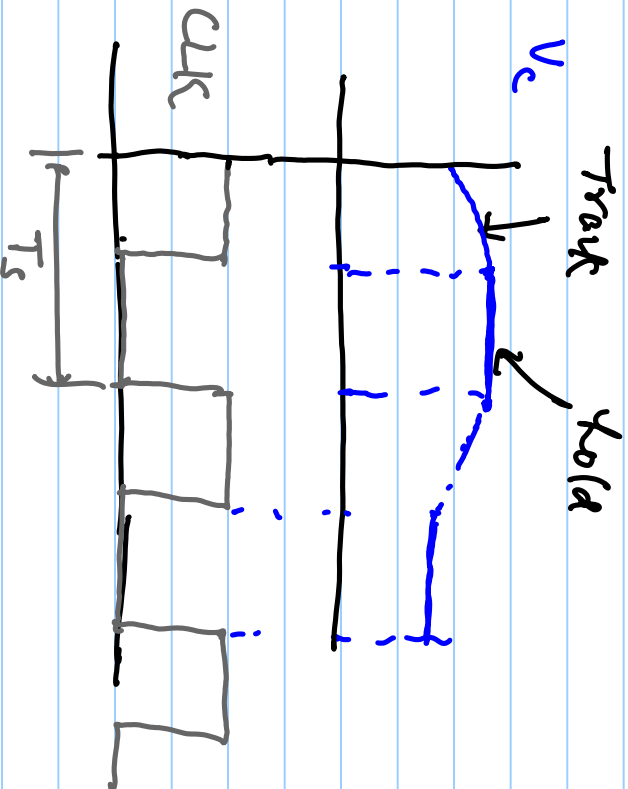
$$P_k = \underline{-\cos \theta + j \sin \theta} = -e^{-j\theta}$$

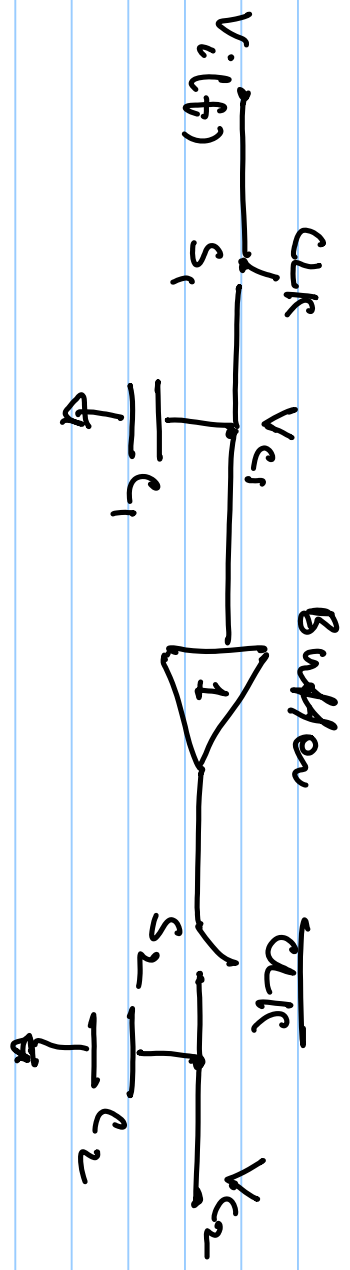


Sampling

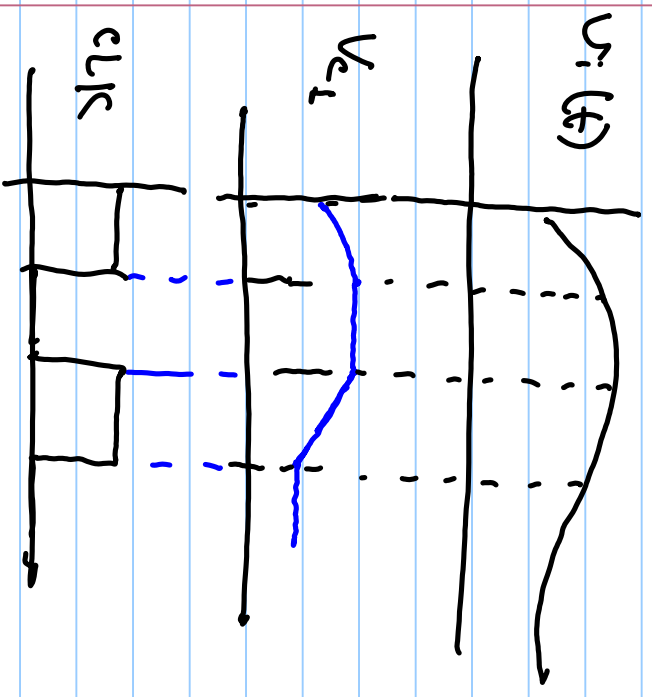


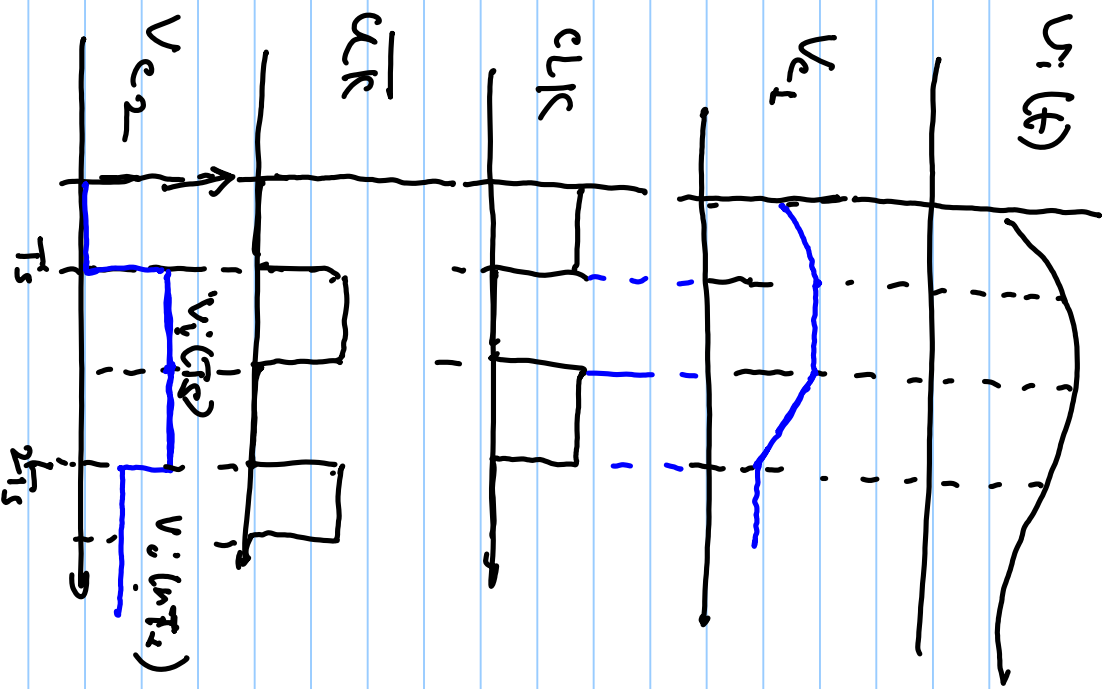
Track & hold
circuit





Sample & hold circuit

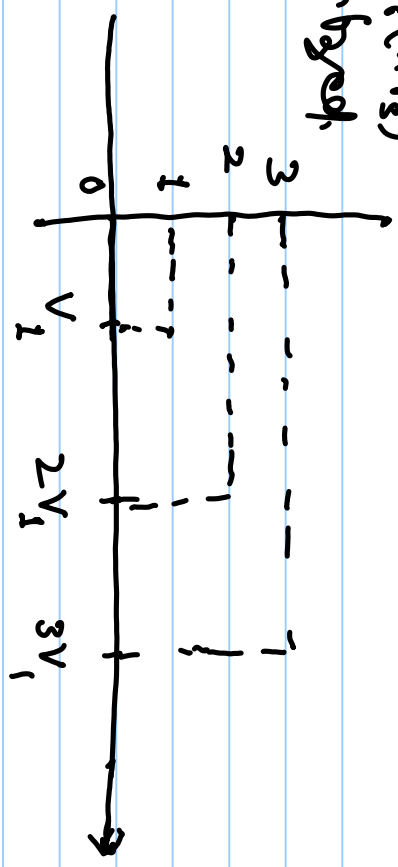




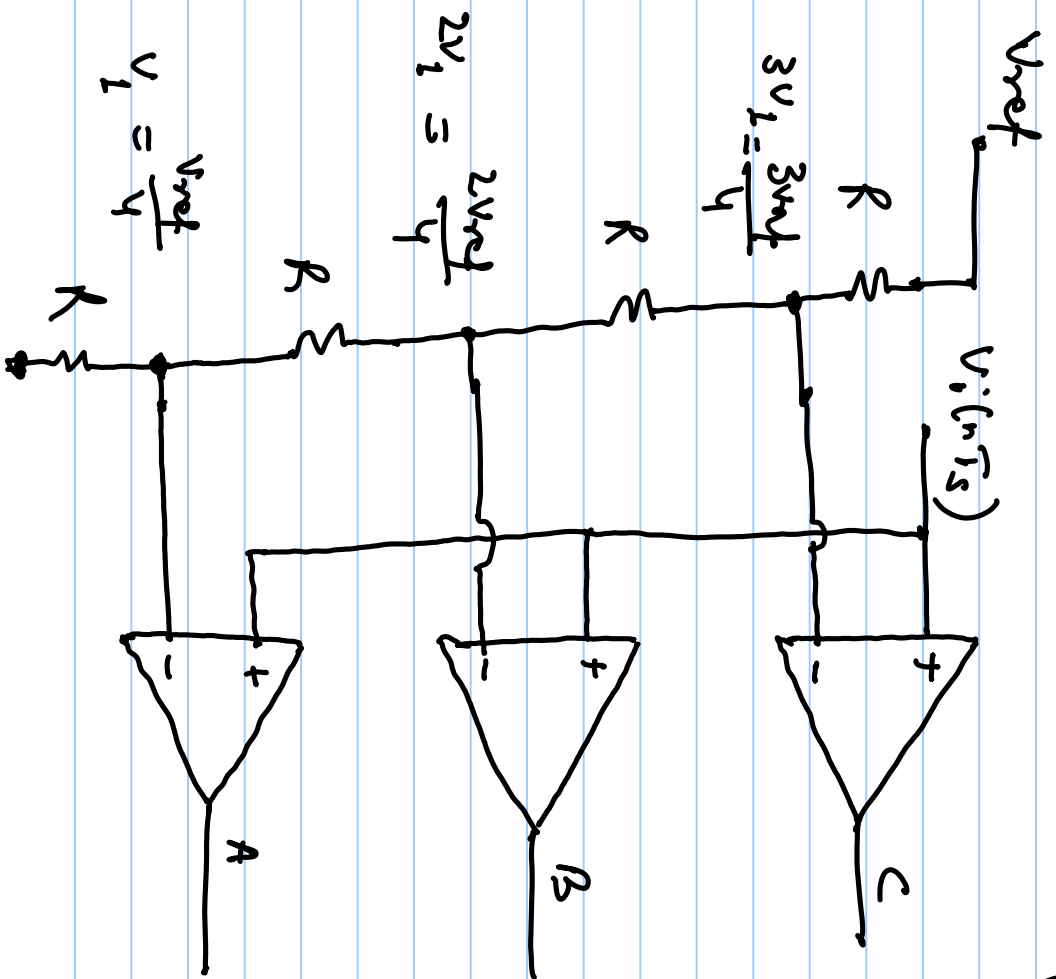
$$v_o = v_i(nT_s)$$

Quantization

$V_i(nT_s)$
quantized



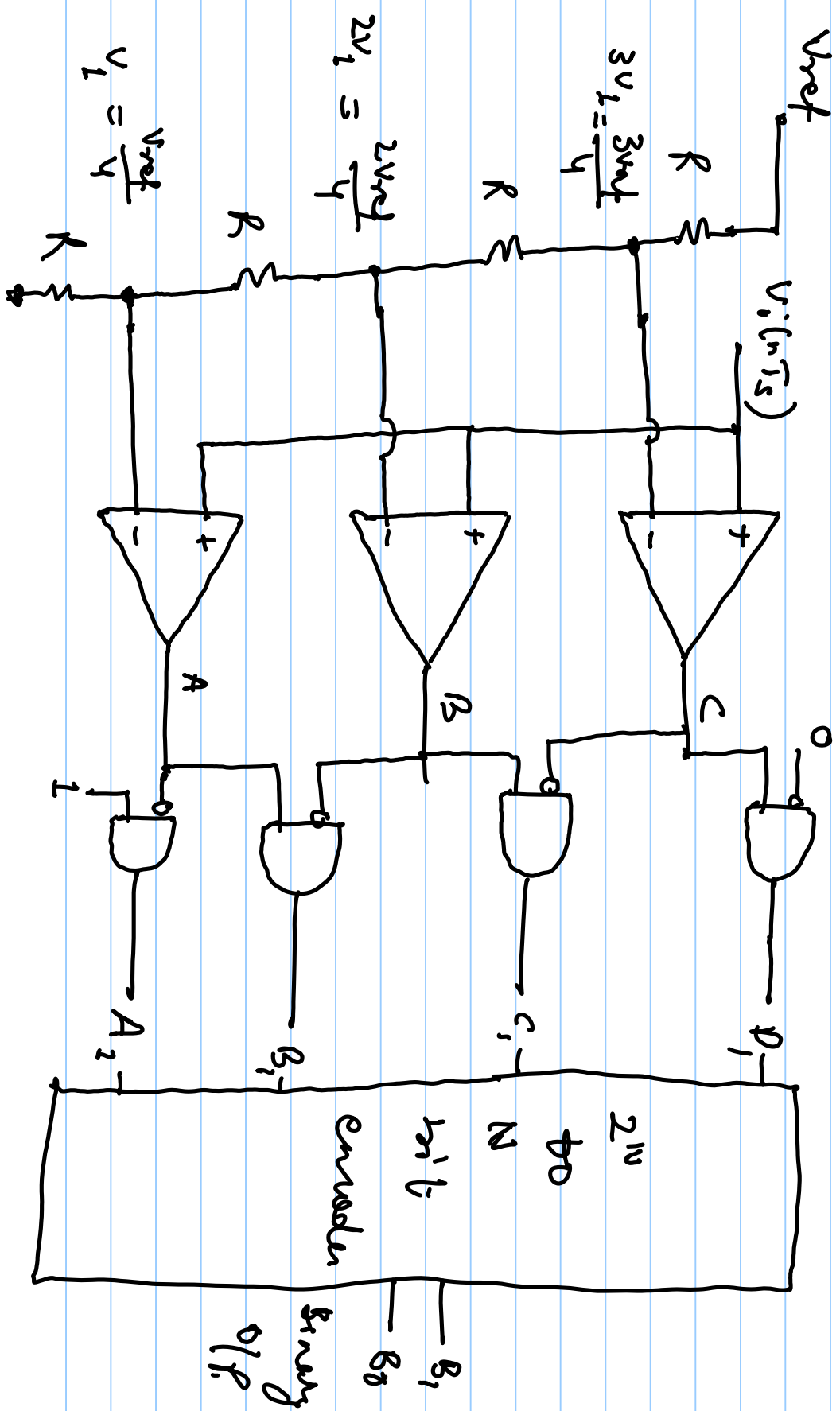
Flash A/D



$V_i < \frac{V_{ref}}{4}$ | $\frac{V_{ref}}{4} < V_i < \frac{V_{ref}}{2}$ | $\frac{V_{ref}}{2} < V_i < \frac{3V_{ref}}{4}$ | $\frac{3V_{ref}}{4} < V_i < V_{ref}$

0	0	0	1
0	0	1	1
0	1	1	1

2^N to N bit encoder



2^N to N encoder

C	B	A	D_1	C_1	B_1	A_1	B_1	B_0
1	1	1	1	0	0	0	1	1
0	1	1	0	1	0	0	1	0
0	0	1	0	0	1	0	0	1
0	0	0	0	0	0	1	0	0

No. of comparators need to build N -bit flash 2^N
 $= 2^N - 1$