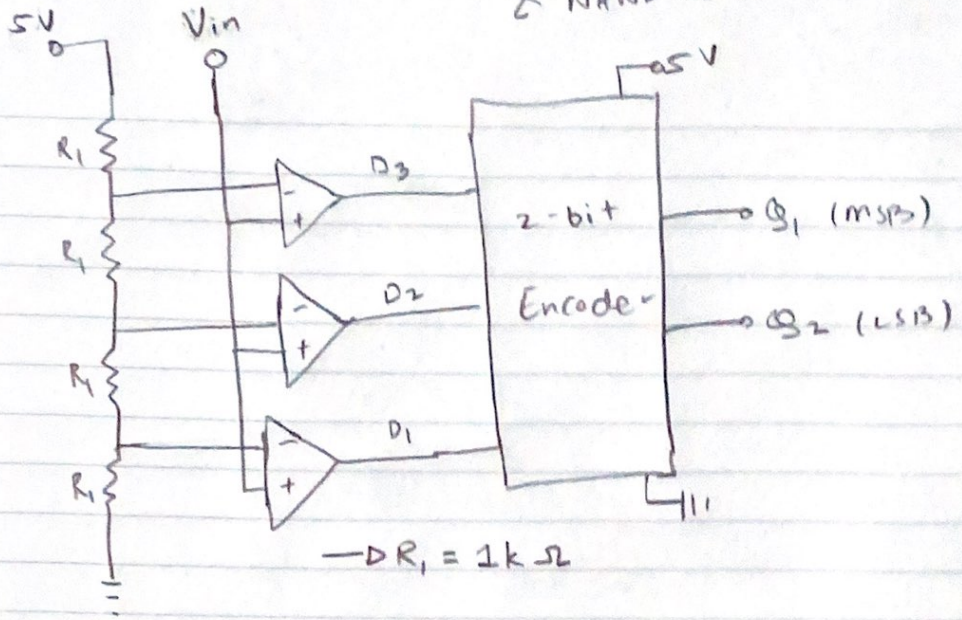
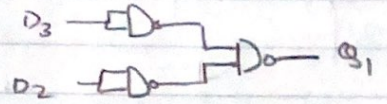
2-Bit A/D Converter w/ LM339N Comparator & NAND Gates

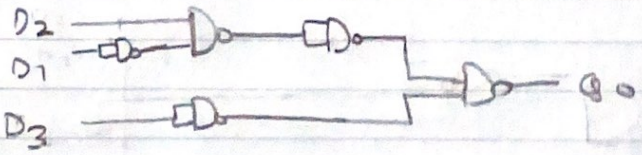


Priority Encoder Logic

$Q_1 = \bar{D_3} D_2 + D_3 = D_3 + D_2$ (Absorption Law)



$Q_0 = \overline{D_3 D_2} D_1 + D_3 = \bar{D_2} D_1 + D_3$ (" ")



Analog Input (V)	Comparator Output			Digital outputs	
V_{in}	D_3	D_2	D_1	Q_1	Q_0
0 - 1.25	0	0	0	0	0
1.25 - 2.5	0	0	1	0	1
2.5 - 3.75	0	1	X	1	0
3.75 - 5	1	X	X	1	1