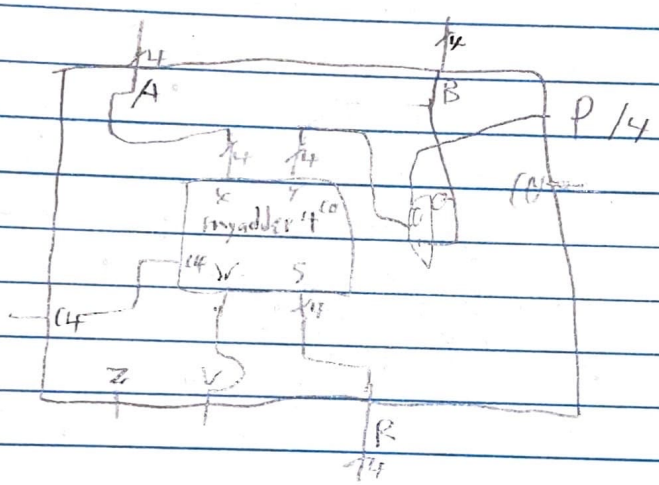
Dylan Thomas

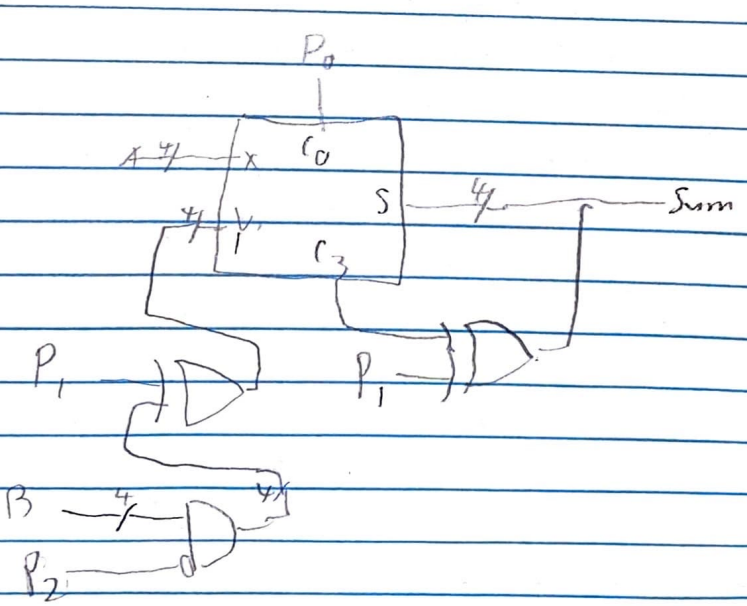
1.

p3 p2 p1 p0	a3 a2 a1 a0	b3 b2 b1 b0	c-in	op	notes
0 0 0 0		b3 b2 b1 b0	0	R=A+B	add
0 0 0 1		b3 b2 b1 b0	1	R=A+B+1	add and inc
0 0 1 0		$\bar{b}3\ \bar{b}2\ \bar{b}1\ \bar{b}0$	0	R=A-B-1	Sub and dec
0 0 1 1		$\bar{b}3\ \bar{b}2\ \bar{b}1\ \bar{b}0$	1	R=A-B	Sub

2.



3.



5. P0 controls carry-in, p1 controls sign of B, and p2 controls if B is used at all

4.
```
module alu(P,A,B,C0,R,C4,V,Z);
  input[3:0]P, A, B;
  output C4, V, Z;
  input C0;
  output[3:0]R;
always @(*)
if
```

6. step one: write out code in verilog
step two: simulate
step three: upload and test the 8 different possible combos
step four: finish