Adder:

```
A B | Cin | Cout | Sum | ExCout | ExSum
0 0 |  0  |  0   |  0  |   0    |   0
0 0 |  1  |  0   |  1  |   0    |   1
0 1 |  0  |  0   |  1  |   0    |   1
0 1 |  1  |  1   |  0  |   1    |   0
1 0 |  0  |  0   |  1  |   0    |   1
1 0 |  1  |  1   |  0  |   1    |   0
1 1 |  0  |  1   |  0  |   1    |   0
1 1 |  1  |  1   |  1  |   1    |   1
```


Decoder:

```
En A0 A1| O0 O1 O2 O3 | Expected Output
0  0  0 |  0  0  0  0 | All false
0  1  0 |  0  0  0  0 | All false
0  0  1 |  0  0  0  0 | All false
0  1  1 |  0  0  0  0 | All false
1  0  0 |  1  0  0  0 | O0 Only
1  1  0 |  0  1  0  0 | O1 Only
1  0  1 |  0  0  1  0 | O2 Only
1  1  1 |  0  0  0  1 | O3 Only
```

Multiplexer:

```
A0 A1 | in0 in1 in2 in3 | EX_OUT | Out
 0  0 |  1   0   0   0  |   1    | 1
 0  1 |  0   1   0   0  |   1    | 1
 1  0 |  0   0   1   0  |   1    | 1
 1  1 |  0   0   0   1  |   1    | 1
 0  0 |  0   1   1   1  |   0    | 0
 0  1 |  1   0   1   1  |   0    | 0
 1  0 |  1   1   0   1  |   0    | 0
 1  1 |  1   1   1   0  |   0    | 0
```

Time	1 us	2 us	3 us	4 us	5 us	6 us	7 us	8 us
a								
b								
andab								
andbIn								
andaIn								
orOut								
carryout								
orab								
sum								