unsigned char x; // 255 to 0
char x; // 127 to -128

Range for each data type.

0111 1111 1000 0000

(-1) => 1111 1111

3216 8 4 2 0

-24 = -(0001 1000)

1110 1000 8 bit signed binary or 8 bit 2's Comp.

---

64 => 0100 0000
+64 0100 0000
overflow
0 1000 0000
↳ (-128)!

Overflow indicated by carry in and out of sign bit, not matching.

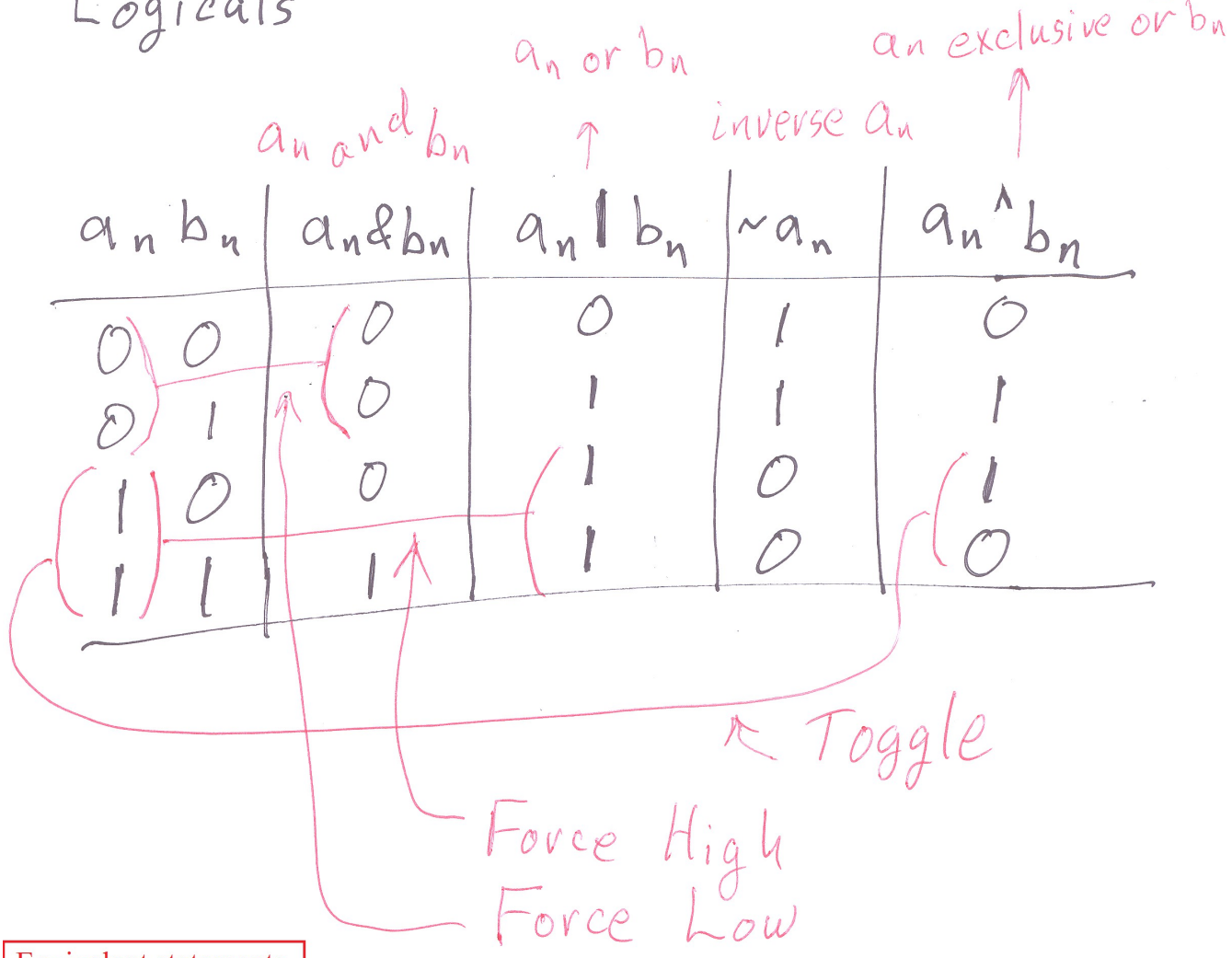
---

0 111 1111 1111 1111 32767
+ 1
0 1000 0000 0000 0000 -32768
b_{15} . . . . . b_0

$-b_{15} \cdot 2^{15} + b_{14} \cdot 2^{14} + \ldots \ldots 2^0 \cdot b_0$

Alternate Interpretation of 16-bit 2's-Complement numbers.

Logicals



Equivalent statements

```
In = In | Mask;
In |= Mask;
```

This is short hand for the first statement.