(A and B) or C

T T T -> T
T T F -> T
T F T -> T
F T T -> T
T F F -> F
F T F -> F
F F T -> T
F F F -> F

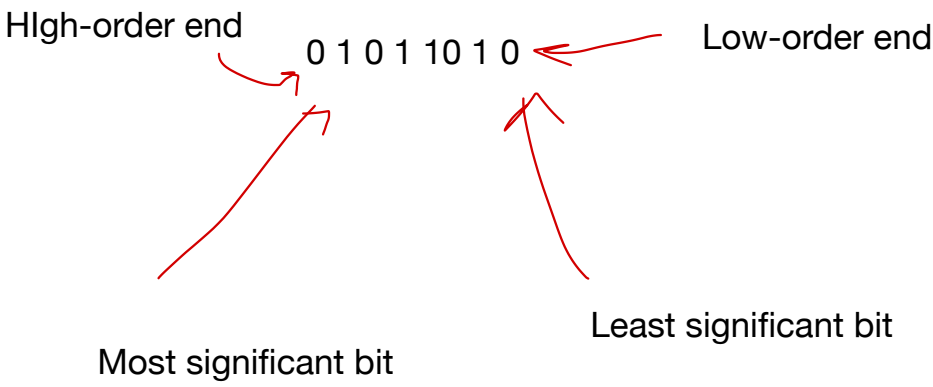
2 raised to the power 3 as there are only two choices for each variable
8

A and (B or C)

T T T -> T
T T F -> T
T F T -> T
F T T -> F
T F F -> F
F T F -> F
F F T -> F
F F F -> F

Precedence makes a major difference to the evaluation

0000 binary -> ?? hex 0x0
1111 binary -> ?? hex 0xF
1001 binary -> ?? hex 0x9



5 5/8 in binary????

0101 . one-half one-quarter one-eighth one-sixteenth

. 1 0 1 0

2^3 2^2 2^1 2^0 2^-1 2^-2 2^-3 2^-4

Two's complement notation

000

0 1 1 -> 3
0 1 0 -> 2
0 0 1 -> 1
0 0 0 -> 0
1 1 1 -> -1
1 1 0 -> -2
1 0 1 -> -3
1 0 0 -> -4

-6 decimal in two's complement

0 1 1 0 = +6
1 0 0 1. complement
1. + 1
1 0 1 0 = -6

Overflow
Truncation

3 + 2

0011 -> 3
0010 -> 2
———
0101 -> 5

0011
1100
+1
1101

-3 + -2

1101
1110
———
1011 -> -5

0010
1101
+1
1110

7 + -5

0111 -> 7
1011 -> -5
0010 -> 2

0101
1010
+1
1011

Sign bit. Exponent x 3. Mantissa x 4

1011
0 10 0
+1
0101