3 → 1 1

$2^2\ 2^1\ 2^0$ ×

2 + 1

||

2 + 1 → 3

1 1 0 0 1 1

$2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0$ ×

2 1

||

32 + 16 + 0 + 0 + 2 + 1 → 71

A → 1100110

B → 0011010

A & B → And

A | B → or

~A = Not

A << n → number of shift

B >> n → " " "

Not

A → 10111

~A → 01000

1 ↔ 0

0 ↔ 1

And = Add

A & B

1 → T + T1 → T(1)

1 T + F0 → 1 T

0 F + T1 → 1 T

0 F + F0 → 0 F

1 1 0 0 1 1 0

0 0 1 1 0 1 0

A & B → 0 0 1 1 0 1 0

True = 1

False = 0

or

(x) or A | B

A → 1 0 1 0

B → 0 1 1 0

A | B → 0 1 1 1

A X B

T T → T(1) = 1 T

1 T X F(0) = 0 F

0 F X T(1) → 0 F

0 F X F → 0 F

A $ B

1 1 1 1 1 1 0

Left Shift

A → 1 0 1 0 1 1 0 → ⌐

A << 2 → 1 0 1 0 1 1 0 0 → ⌐

A → 4 left shift n → shift

→ 4 × 2^n

→ 4 × 2^2

→ 4 × 4

→ 16

Right Shift

A >> 2

A → 1 0 1 0 1 1 → ⌐

B → 0 0 1 0 1 → ⌐

A → 16 Right shift 2 (bit)

→ 16 × $2^{-(n)}$

→ 16 ÷ 2^n

→ 16 ÷ 2^2 → 16 ÷ 4 → 4