Addition

Rules of binary addition

```
0 + 0 = 0
0 + 1 = 1
1 + 0 = 1
1 + 1 = 10
```

Example unsigned binary integer

Example 01

```
0000
0101
----
0101
```

Example 02

```
1000
0101
----
1101
```

Example 03

```
11011000
01010110
--------
100101110
```

Subtraction

Subtraction rules:

```
0 - 0 = 0
0 - 1 =-1
1 - 0 = 1
1 - 1 = 0
```

Examples of signed binary subtractions

Example 01

```
  0101
 -0000
 -----
  0101
```

Example 02

```
  0111
```

```
 -0101
 - - - -
  0010
```

Example 03

```
  01010110
 -11011000
 --------
  10000010
```

Interpreting number is negative or positive

- Observe the sign bit (MSB)
- If '0', the number is positive
- If '1', the number is negative