Addition and Multiplication

1st	2nd	and	or
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	1

Complement

1's Complement of -8: 1111 0111
2's Complement of -8: 1111 1000

1's Complement of 8: 0000 0111
2's Complement of 8: 0000 1000

maximum negative remains unchanged

1's Complement of -36: 1101 1011
2's Complement of -36: 1101 1100

1's Complement of 36: 0010 0011
2's Complement of 36: 0010 0100

Sign bit extension

011	3
010	2
001	1
000	0
111	-1
110	-2
101	-3
100	-4

→ the most significant bits to the next bit of least significant bit set reversed turns out the negative of its value.

0100 + 0100 = 1000
overflow
1000 + 1000 = 0000

7 → 0111 5 → 0101

```
      0101
x  → 1001
-----------
  00000101
  00000000
  00000000
  11011111
-----------
  11011101
```