



$$X = 01101, \bar{X} = 10010$$

$$X + \bar{X} = 11111$$

$$X + \bar{X} + 1 = \cancel{X}00000$$

$$X + \bar{X} + 1 = 0$$

$$\boxed{-X = \bar{X} + 1}$$

$$01111 = 2^4 - 1$$

⋮

$$00001 = 1$$

$$00000 = 0$$

$$11111 = -1$$

⋮

$$10000 = -2^4$$

$$-2^4 = -10000 = 1111 + 1 = 10000$$