

# Integers

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To convert from base 10 to base  $b$  where  $b > 1$ , repeatedly divide the number by  $b$  and store the remainder in the new base form. Digits are stored from right to left so the final remainder is on the left hand side of the new base  $b$  number.

## Modulus

We say  $a$  and  $b$  are congruent modulo  $n$  when  $a - b$  is a multiple of  $n$

## Twos Complement

To convert from binary to the negative twos complement of a binary number, flip the bits and add one.

e.g. 0011 would change to  $1100 + 1 = 1101 = -3$