**Numbers**

* Binary to Decimal
  + Multiply each bit by 2^n where n is the “weight” of the bit
  + The weight is the position of the bit, starting from 0 on the right.
* Octal to Decimal
  + Multiply each bit by 8^n where n is the “weight” of the bit
  + The weight is the position of the bit, starting from 0 on the right.
* Hex to Decimal
  + Multiply each bit by 16^n where n is the weight of the bit
  + The weight is the position of the bit, starting from 0 on the right.
* Decimal to binary
  + Divide each bit by 2 and keep track of the remainder
  + Read in reverse order
* Hex to Binary
  + Convert each hexadecimal digit for 4 but binary representation
* Decimal to Octal
  + Divide each bit by 8 and keep track of the remainder
  + Read each in reverse order
* Decimal to Hex
  + Divide each bit bit by 16 and keep track of remainder
  + Read each in reverse order
* Binary to Hex
  + Group bits into fours
  + Convert to Hex Digits
* Octal to Hex
  + Use binary as an intermediate
    - Convert octal to binary first
  + Start from right, group converted binary bits into groups of 4
  + Convert to hex digits
* Hex to Octal
  + Use Binary as an intermediate
    - Convert Hex to Binary first
  + Convert Binary to Octal
* Binary Addition
  + Two n-bit values
    - Add individual bits
    - Propagate values
* Binary Subtraction
  + Subtract individual buts
  + Borrow from the left if we have a 0 on the top row.
* Binary Division
  + Binary, two n-bit values
  + As with decimal values