Bit Vectors

logical shift right = arithmetic shift right
  = div by 2

arithmetic shift left = mult by 2

```
  &      |    ~        ^      <<    >>
  ↑                    ↑      ↑      ↑
                      XOR   left   right   not specified if arith or logical
Bitwise                    shift  shift    Compiler dependent
And
ands                                        shift unsigned #s
Bits together
```

XOR, ~ is own inverse

Sets in comp sci, lets order them in math, we order
A ∩ B   intersection   what's in both   1 operation
A ∪ B   union   combine   bit wise or
 A - B = A ∩ B̄   diff   what is in A that is not in B   2 operations
  Ā or A^c   complement   everything not in A

bit set = {1, 0, 0, 1}

1 is identity element for AND
0 is identity element for OR