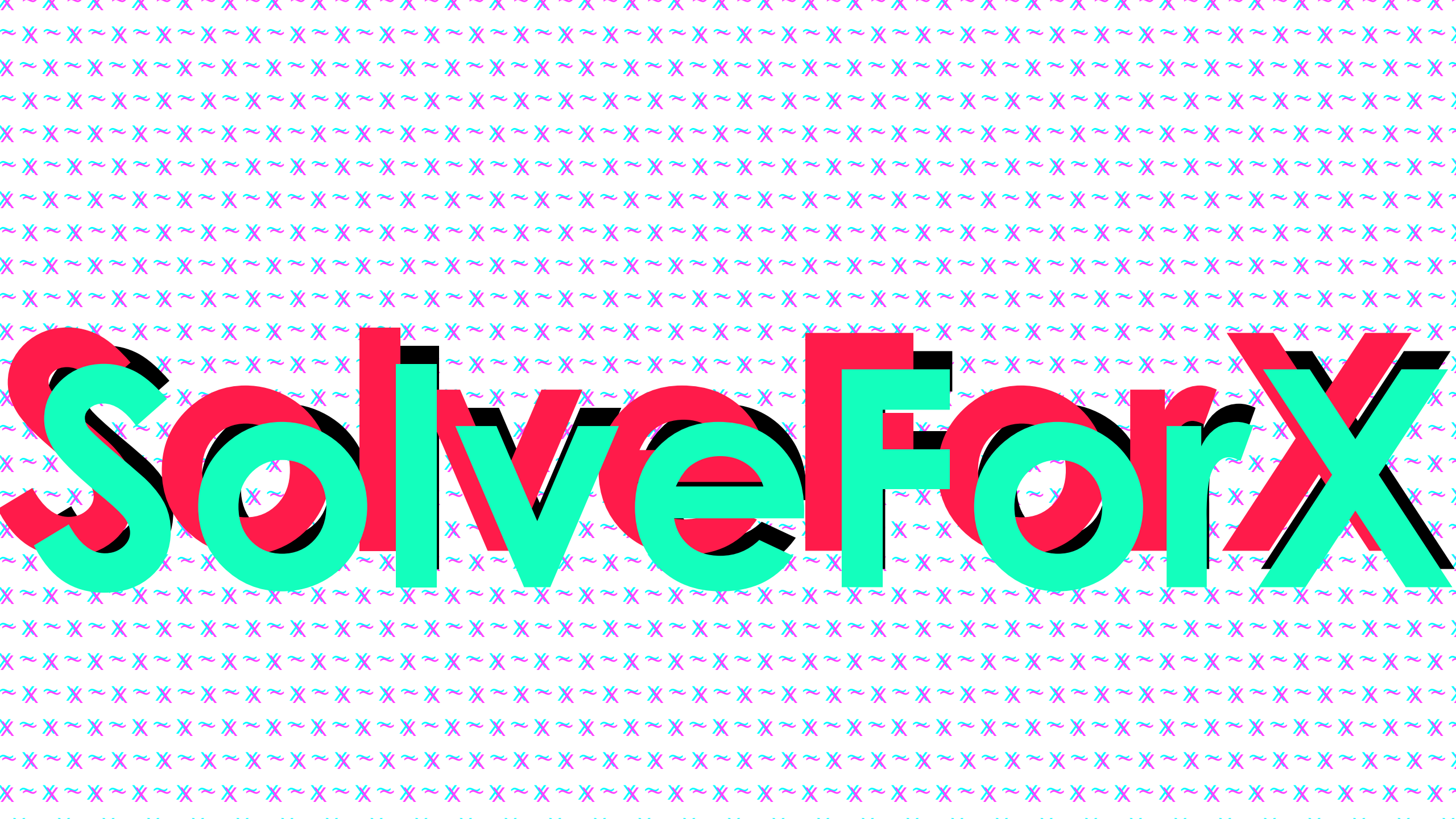

SolveForX

Binary and Unary Bitwise Operations

AND &

OR |

XOR ^

COMPLIMENT ~

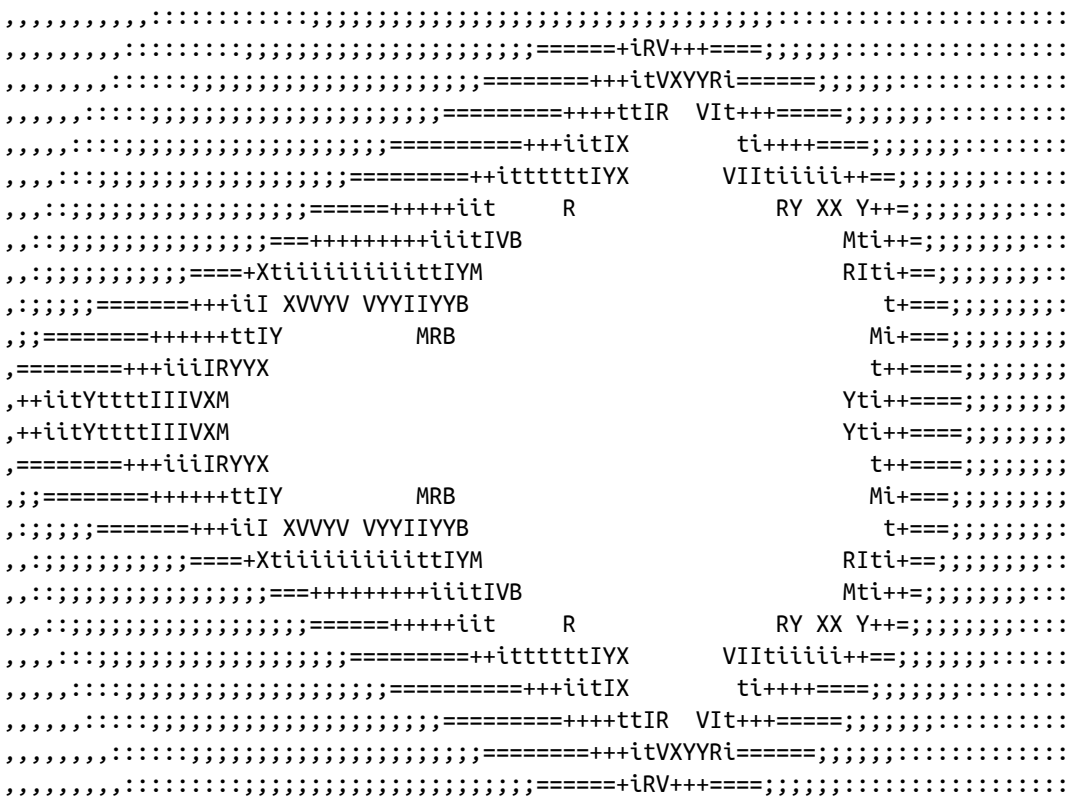
LEFT SHIFT <<

RIGHT SHIFT >>

UNSIGNED RIGHT SHIFT >>>

The Mandelbrot Set

The **Mandelbrot set** is the set of complex numbers c for which the function $f_c(z) = z^2 + c$ does not diverge when iterated from $z = 0$, i.e., for which the sequence $f_c(0)$, $f_c(f_c(0))$, etc., remains bounded in absolute value.



Rules

If the **complex number** does not **diverge**, it is part of the Mandelbrot set and we color it **black**.

Otherwise we leave it colored **white**.

Problem 1

- How do we display something to the screen in Java?

- How do we display something in a Java window?

- How do we animate something in a window? (bonus!)

Problem 2

What does the Mandelbrot set equation look like in code?

How do we make it more efficient?

Optimizations

- *The top and bottom half are the same!*
- Color the set based on number of iterations?