Hahhha

**Algorithm 1** Calculate $y = x^n$

**Require:** $n \geq 0 \vee x \neq 0$
**Ensure:** $y = x^n$
  $y \leftarrow 1$
  **if** $n < 0$ **then**
    $X \leftarrow 1/x$
    $N \leftarrow -n$
  **else**
    $X \leftarrow x$
    $N \leftarrow n$
  **end if**
  **while** $N \neq 0$ **do**
    **if** $N$ is even **then**
      $X \leftarrow X \times X$
      $N \leftarrow N/2$
    **else** {$N$ is odd}
      $y \leftarrow y \times X$
      $N \leftarrow N - 1$
    **end if**
  **end while**

x