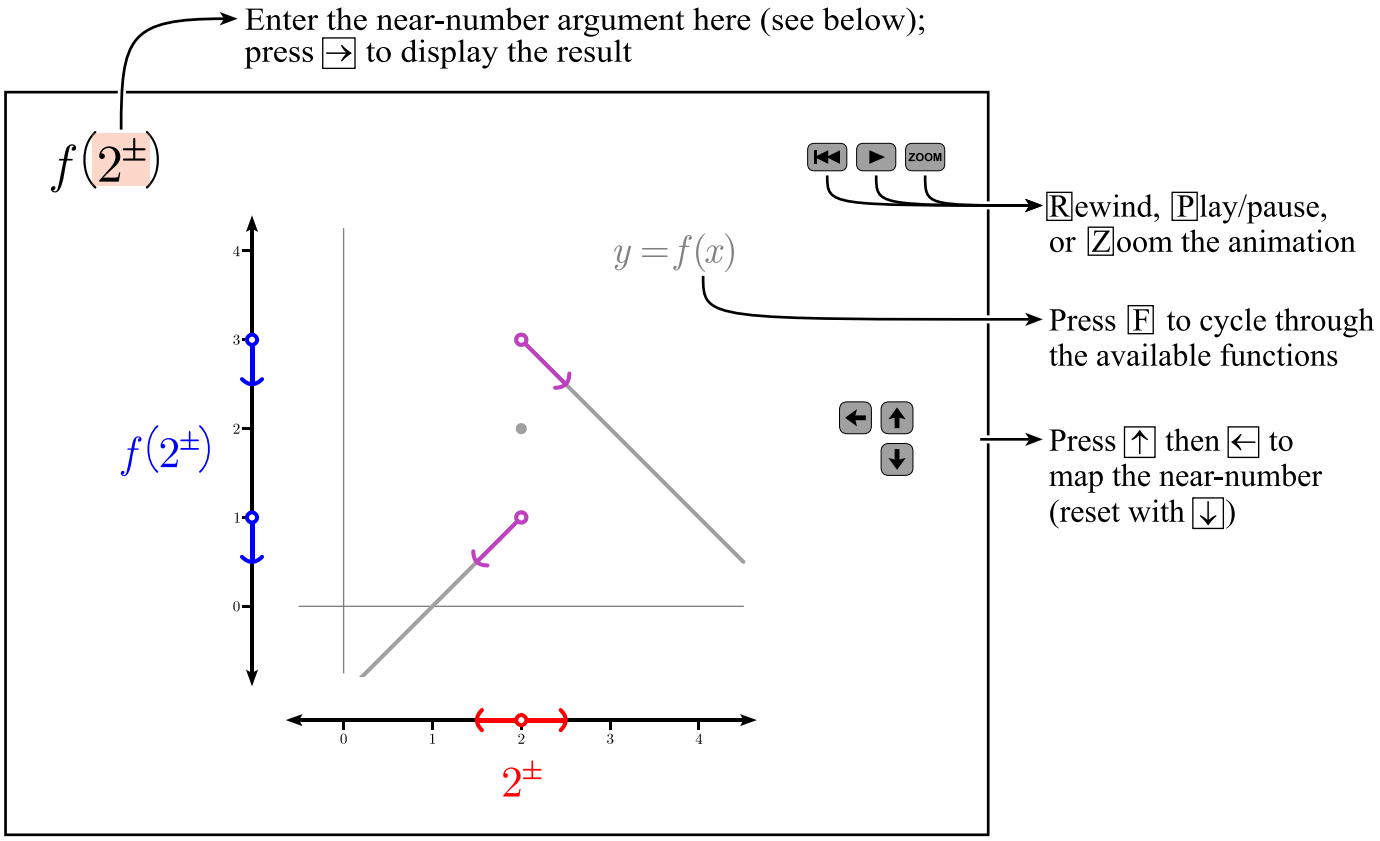
Please note that some browsers require the animation to be clicked first to activate it.



- Near-numbers are entered as usual (see instructions for the basic near-number viewer), with the following addition:
  - Enter "nice" multiples of π for the trigonometric functions by entering a numerator and pressing ", then using / to cycle through the denominators 2, 3, 6, and 1.

    (e.g., 2 " / / gives $\frac{2\pi}{3}$)
- The available functions (at present) are the one pictured above and $f(x) = x^2, \sqrt{x}, 1/x, \sin x, \cos x, \tan x$
- The near-number result and, indeed, even the path of the near-number through the function's graph are not automatically displayed. This allows the user, when desired, to practice visualizing each step of the process and use the animation to check his or her thinking.

A few illustrative examples of near-number function computation are below. At some level, the text is irrelevant—you can tell what the result is simply by applying f to the near-number (no memorization needed!):

$\boxed{f(x) = x^2}$

$(2^+)^2 \to 4^+$: Squaring the numbers just to the right of (i.e., just larger than) 2 results in numbers just larger than 4.

$(-2^+)^2 \to 4^-$: Squaring the numbers just to the right of (i.e., just larger than) -2 results in numbers just *smaller* than 4—remember than being just larger than -2 means that the absolute value is closer to zero (consider -1.9999), so the squares will be less than 4.

$(-2^-)^2 \to 4^+$: Squaring the numbers just to the left of (i.e., just smaller that) -2 results in numbers just larger than 4—here,being just smaller than -2 means that the absolute value is farther from zero (consider -2.0001), so the squares will be greater than 4.

$(+\infty)^2 \to +\infty$: Squaring large positive numbers results in large positive numbers.

$(\pm\infty)^2 \to +\infty$: Squaring large [positive and negative] numbers results in large positive numbers.

$\boxed{f(x) = 1/x}$

$1/1^{+\bullet} \to 1^{-\bullet}$: Reciprocating numbers just larger than (or equal to) 1 results in numbers just smaller than (or equal to) 1—this reversal of sides is turn in general for reciprocals of finite near-numbers (because this is a decreasing function).

$1/0 \to \bigstar$: Division by zero is, and will always be, nonsense!

$1/0^+ \to +\infty$: In contrast to the above example, this is *not* division by zero (it's division by 0^+)! Reciprocating small positive numbers results in large positive numbers.

$1/+\infty \to 0^+$: Conversely, reciprocating large positive numbers results in small positive numbers.

$\boxed{f(x) = \sin x}$

$\sin\left(\frac{\pi}{2}^{+\bullet}\right) \to 1^{-\bullet}$: The sine function takes the numbers near (and including) $\frac{\pi}{2}$ to numbers just to the left of (and including) one.

$\sin(\pi^-) \to 0^+$: The sine function takes numbers just to the left of π to small positive numbers.

$\sin(+\infty) \to \bigstar$: The sine function maps large numbers to the closed interval $[-1, 1]$, no matter how large they become. Because this interval fits into none of our basic near-numbers, we simply resort to the trivial statement that it "$\to \bigstar$".

Note that if we allow ourselves to consider near-numbers such as $[-1, 1]$ (which is a perfectly good non-basic near-number), we can say very precisely that $\sin(+\infty) \leftrightarrow [-1, 1]$.