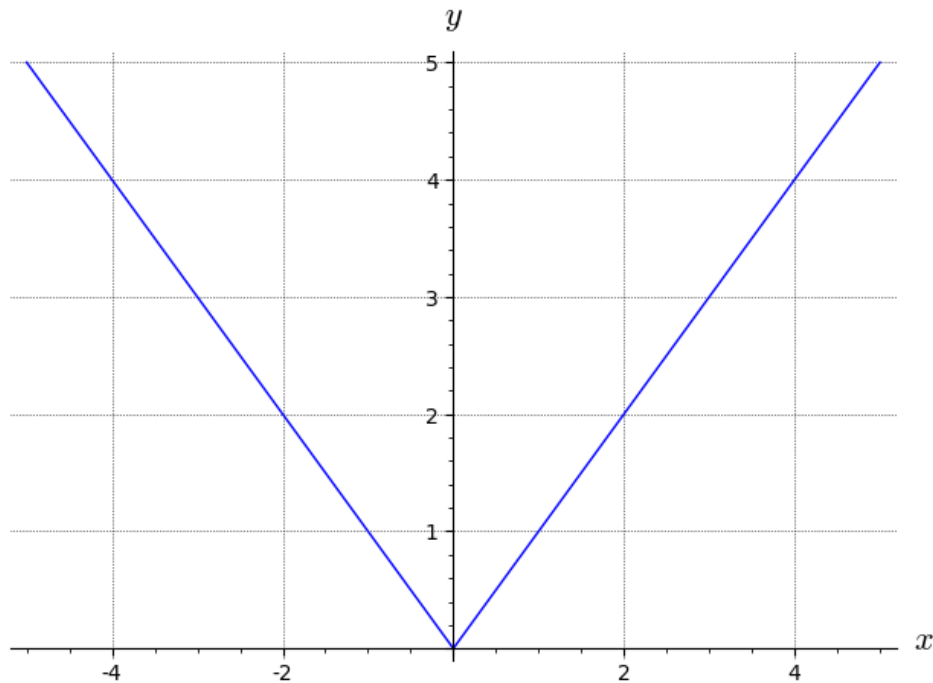## Absolute Value Function

The absolute value function has the form $f(x) = |x|$.

Properties of the absolute value function $f(x) = |x|$:

- Domain: All real numbers, $(-\infty, \infty)$

- Range: All non-negative real numbers, $[0, \infty)$

- Symmetry: f is an even function. Its graph is symmetric about the y-axis.

- Increasing/Decreasing:

  - f is decreasing on $(-\infty, 0)$.
  - f is increasing on $(0, \infty)$.

- Extreme values: The minimum value is $y = 0$ at $x = 0$.

- Interesting features:

  - The graph is a V-shaped curve with a sharp point at $(0, 0)$.
  - The left side of the graph overlaps the line $y = -x$.
  - The right side of the graph overlaps the line $y = x$.