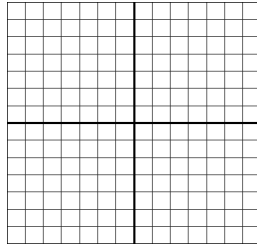


$f(x) = |x|$ Let's rewrite $f(x)$ as a piecewise function →



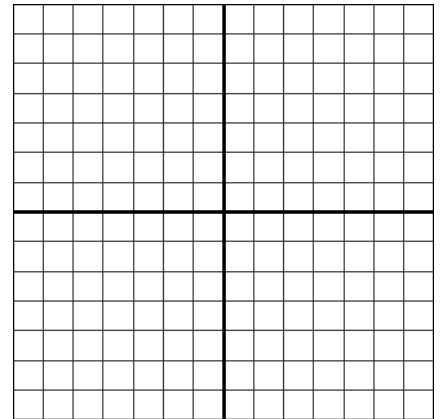
Examples:

Graph each of the following piecewise functions.

- Determine the limit from the left-side and right-side of the indicated x -value(s)?
- Determine if the limit exists at the indicated x -value(s).
- State whether the function is continuous or discontinuous at the indicated x -value(s).
- If it is discontinuous, state what type of discontinuity occurs at the x -value(s).

1.

$$f(x) = \begin{cases} x^2 & \text{if } x \leq 1 \\ -x + 2 & \text{if } x > 1 \end{cases}$$



2.

$$g(x) = \begin{cases} -x^2 & \text{if } x \leq 0 \\ \sqrt{x} & \text{if } 0 < x \leq 4 \\ x - 3 & \text{if } x > 4 \end{cases}$$

