

Sketch each function below WITHOUT using a graphing calculator (or anything online that will graph it). Find the domain and range of each function. Remember, all functions must pass the Vertical Line Test.

1. $f(x) = \begin{cases} \sqrt{x+3}, & x \geq 1 \\ -x, & x < 0 \end{cases}$

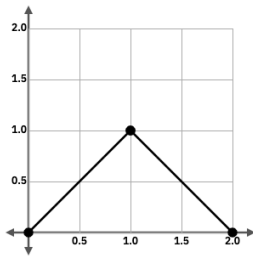
2. $f(x) = \begin{cases} \frac{1}{x}, & x \geq -1 \\ x^2 - x, & x < -1 \end{cases}$

3. $f(x) = \begin{cases} 2, & x \geq 5 \\ -2x, & -2 \leq x \leq 5 \\ 2 - x^2, & x < -2 \end{cases}$

4. $f(x) = \begin{cases} \sqrt{x+1}, & x \geq 8 \\ x - 5, & 0 < x < 8 \\ x^2 - 5, & x \leq 0 \end{cases}$

Write a Piece-Wise function for the following functions.

5.



6. $y = |x|$