Name _____

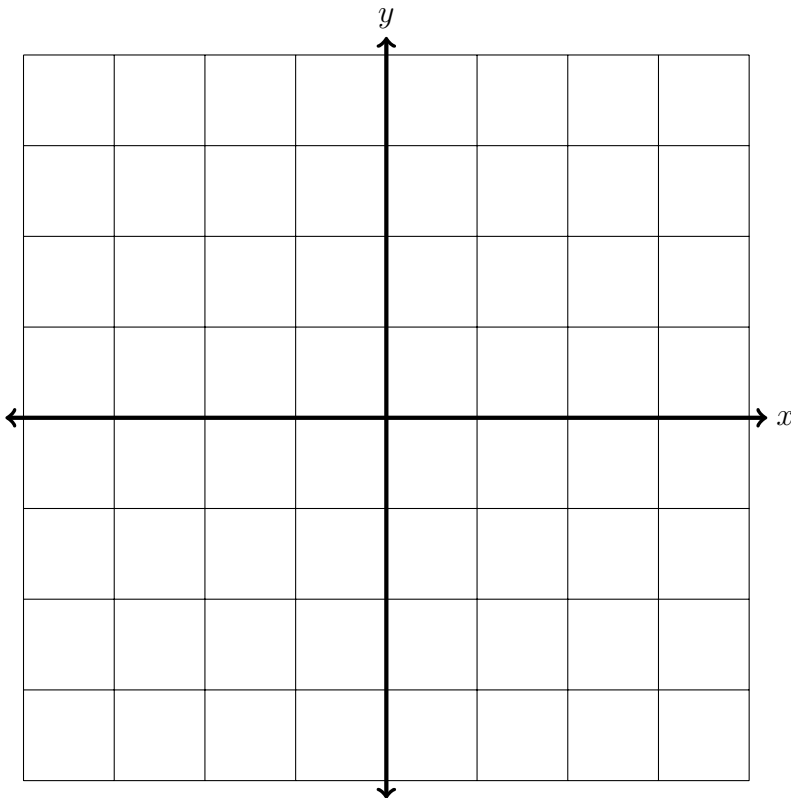- **Write as neatly as you can!**

- **No calculators are allowed.**

- **You must show your work to obtain full credit.**

1. (*5 points*) Graph the following piecewise-defined function.

$$f(x) = \begin{cases} 1 & x < -2 \\ |x| & -2 \le x \le 1 \\ 2 - x & x > 1 \end{cases}$$

2. (*5 points*) Consider the function $f(x) = 1 + \sqrt{x - 2}$. Find the domain and range of this function.

(**Hint: does it make sense to evaluate the function when $x = 0$? Is it possible to get 0 as an output?**)

3. (*1 point, extra credit*) Water service costs a fixed amount each month, plus some price per unit of water used. Suppose that in January you use 100 units and get charged $35, and in February you use 150 units and get charged $35. Find an equation that describes the relationship between the amount of water used and the monthly bill.