

* when using \leq or \geq , use brackets $\{ \}$
 * when using $<$ or $>$, use parentheses $()$

- What types of function will NOT take all real numbers as inputs?

- ① $f(x) = \sqrt{x}$ (imaginary answer)
 ② $f(x) = \frac{1}{x}$ (undefined answer)

Representing Domain

- List the algebraic operation in order of evaluation. What restrictions does each operation place on the domain of the function?

| Function | Set Builder | Interval |
|-------------------------|---|--|
| $f(x) = \frac{2}{x-3}$ | $\{x \mid x \neq 3\}$ All values of x such that x can not be 3. | $(-\infty, 3) \cup (3, \infty)$ You can start at negative infinity and stop at 3 then continue to infinity. |
| $f(x) = \sqrt{x-5} + 1$ | $\{x \mid x \geq 5\}$ All values of x such that x is greater or equal to 5. | $[5, \infty)$ |
| $f(x) = 4 - (x-3)^2$ | $\{x \mid x \in \mathbb{R}\}$ All values of x , such that x can be all real numbers. | $(-\infty, \infty)$ |