

## Pre Calculus Honors Review

### Lines

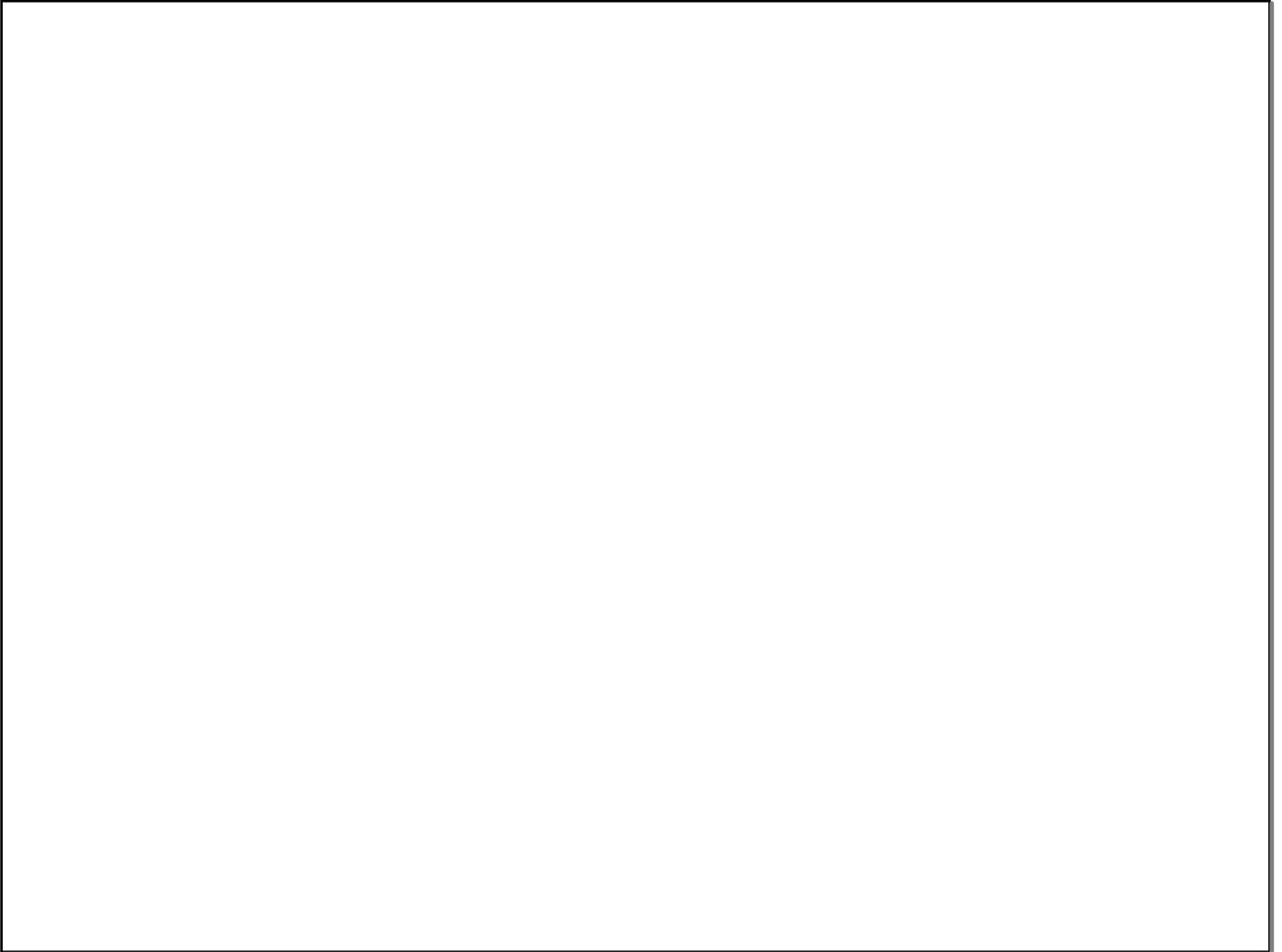
General Form:  $Ax + By + C = 0$

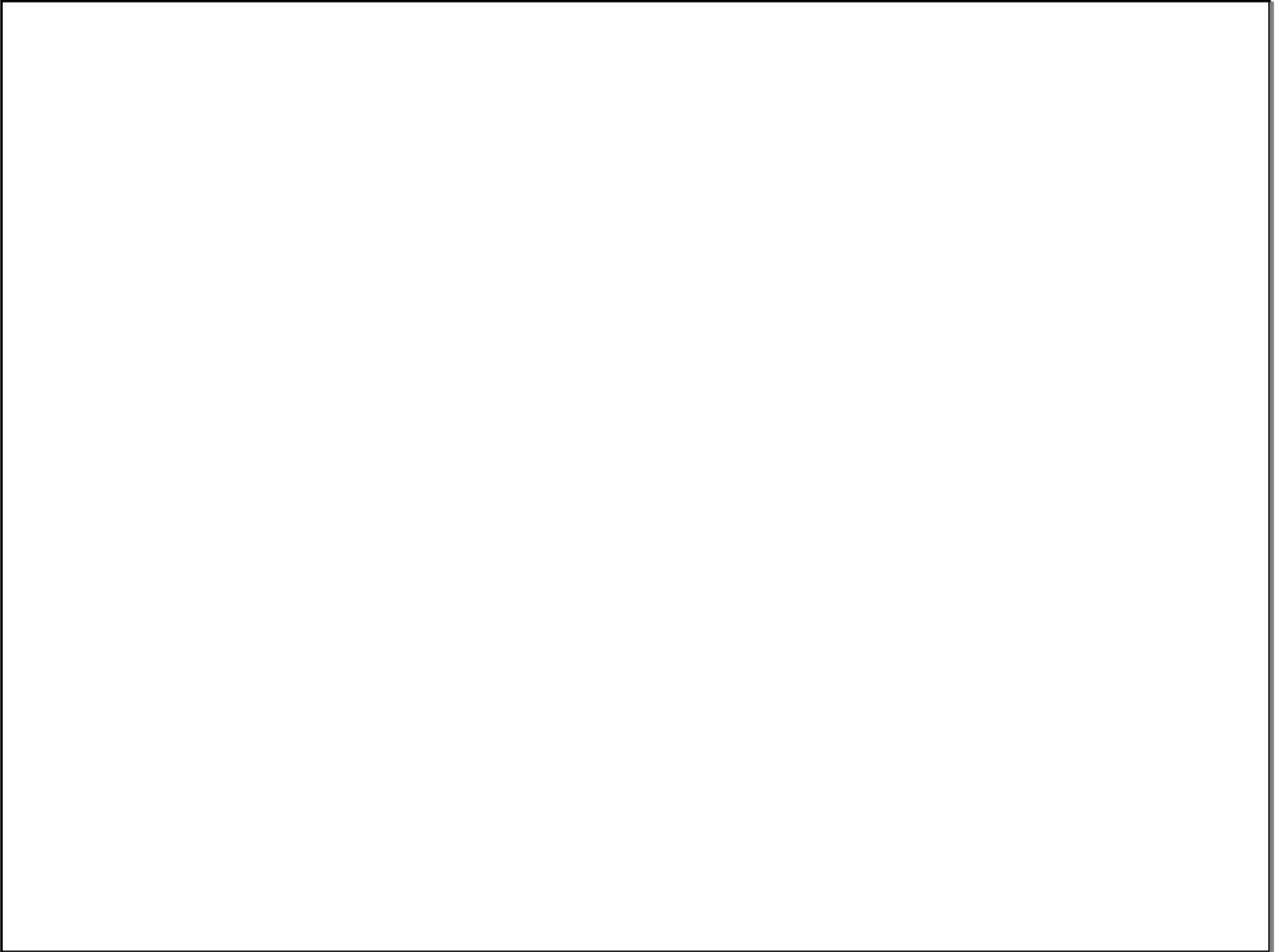
Slope Intercept:  $y = mx + b$

Point-Slope:  $y - y_1 = m(x - x_1)$

Vertical Line:  $x = a$

Horizontal Line:  $y = b$





## Set Notation

$\{x \mid x > 5\}$   
 begin set → {    |    } → end set  
 Define Variable    such that    terms

all values  $x$  such that  $x$  is greater than 5

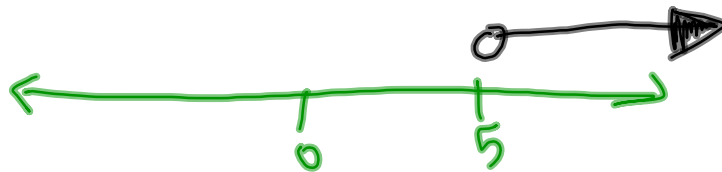
Define variable, then the terms

## Interval Notation

$(5, \infty)$   
 not included → (    ,    ) ←  $\infty$  will not be contained  
 start    End

all values from 5 to  $\infty$   
non-inclusive

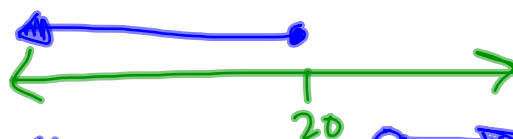
variable implied



Example:

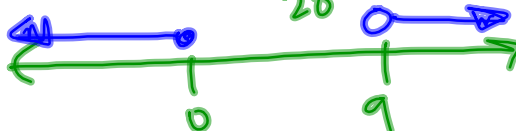
$$\{x \mid x \leq 20\}$$

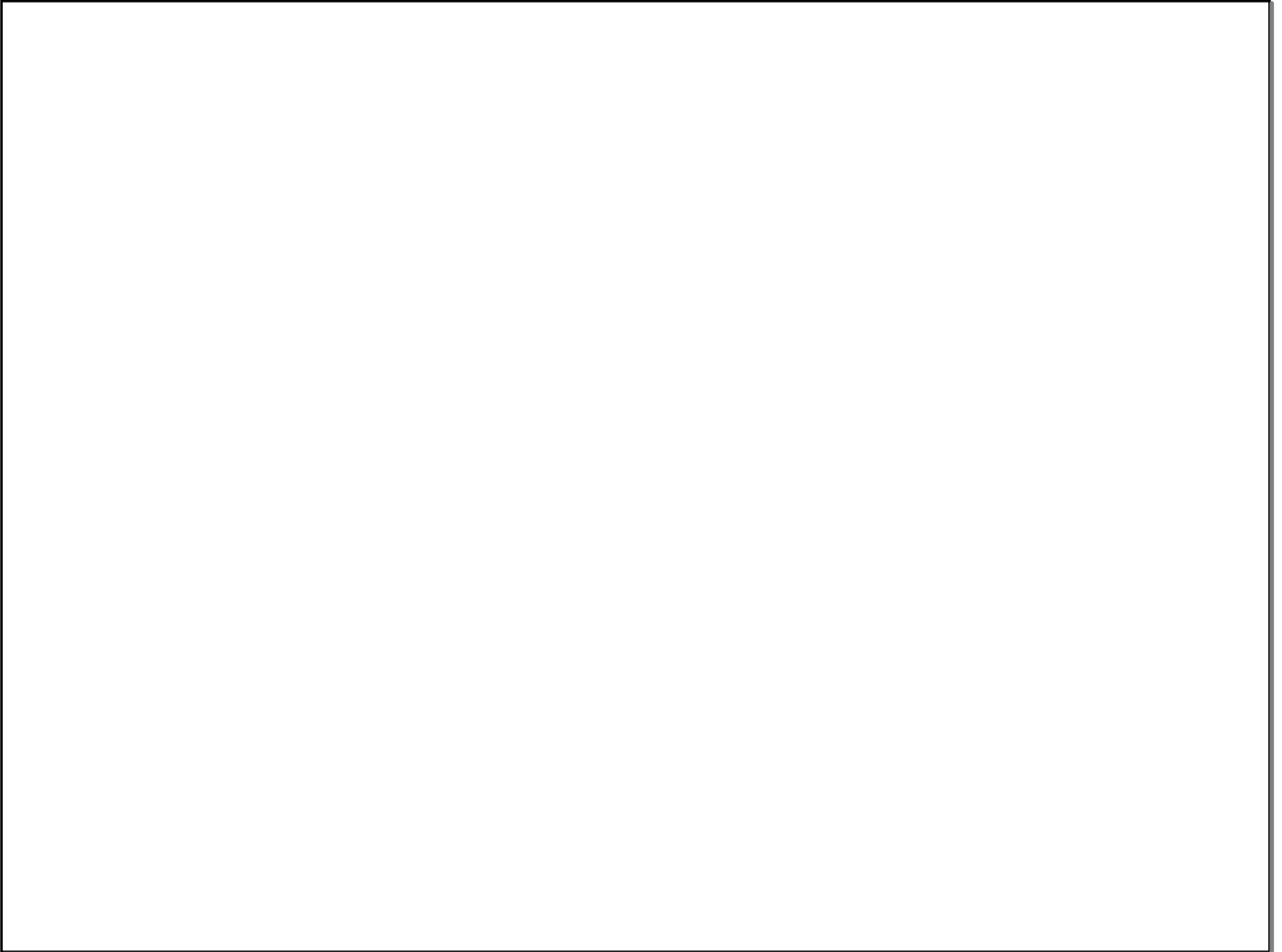
$$(-\infty, 20]$$



$$\{x \mid x \leq 0 \text{ or } x > 9\}$$

$$(-\infty, 0] \cup (9, \infty)$$





## Domain and Range

x-values

INPUT

Left to Right

y-values  
output

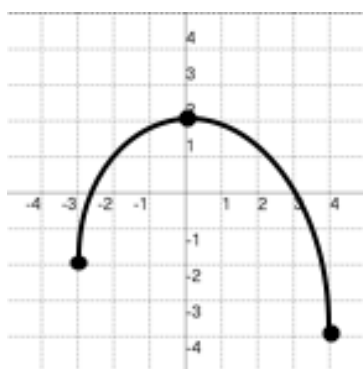
Top to Bottom

$$\frac{\div 0}{\sqrt{-\#}}$$

$$\log(-\#)$$

Example:

$$D: [-3, 4] \quad \{x \mid -3 \leq x \leq 4\}$$
$$R: [-4, 2] \quad \{y \mid -4 \leq y \leq 2\}$$





Draw a continuous function with:

Domain:  $[-3, 5)$

Range  $[-4, 6]$