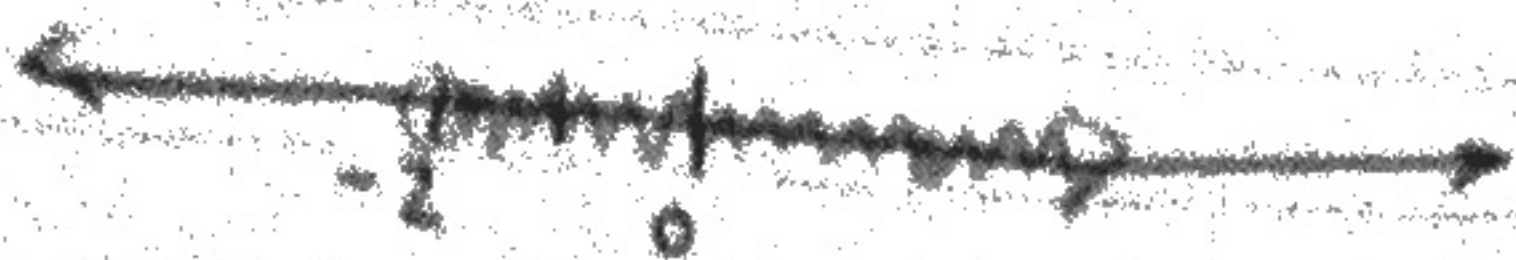
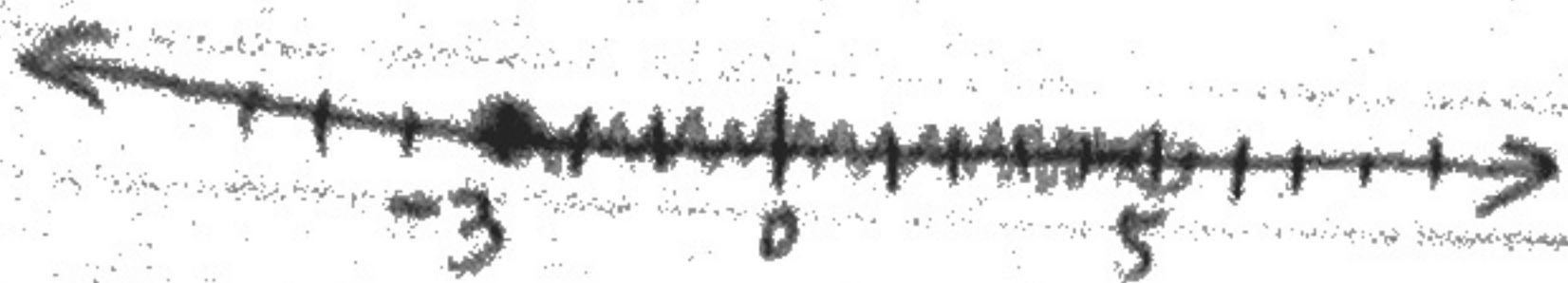


## UNDERSTANDING INTERVAL NOTATION



all numbers  $x$  such that  
 $x > -2$



all numbers  $x$  such that  
 $-3 \leq x < 5$

What is an interval?

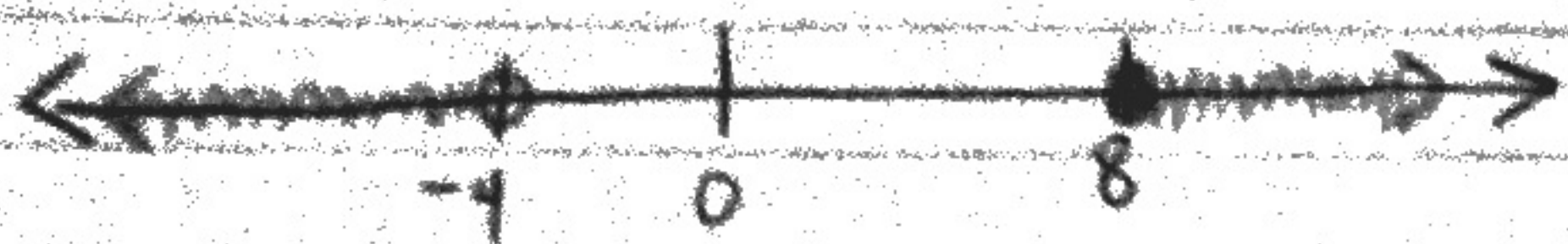
$[a, b]$ ,  $(a, b)$ ,  $(a, b]$ ,  $[a, b)$

$[a, b]$  all numbers between  $a$  and  $b$   $\longleftrightarrow a \leq x \leq b$   
including  $a$  and  $b$

$(a, b)$  all numbers between  $a$  and  $b$   $\longleftrightarrow a < x < b$   
exclude  $(a, b)$  not included)

$(a, b]$   $\longleftrightarrow a < x \leq b$

$[a, b)$   $\longleftrightarrow a \leq x < b$



all numbers  $x$  such that  
 $x < -4$  OR  $x \geq 8$

$(-\infty, -4)$  OR  $[8, \infty)$

Represent OR by the symbol  $\cup$  (union)

$(-\infty, -4) \cup [8, \infty)$