

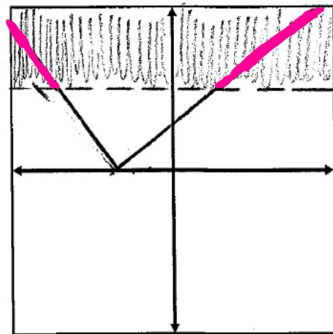
3.6 Graphing Linear Inequalities

We have learned:

- Absolute Value graphs are symmetrical
- Because absolute value graphs are symmetrical, they can have at most two solutions
- When we shade below a horizontal line, we have a conjunction, or an "and" inequality
- When we shade above a horizontal line, we have a disjunction, or an "or" inequality.
- GOAL
 $>$ or $<$

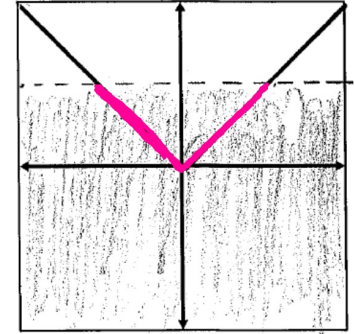
Page 1

In the "Can I Graph You Too?" activity, we found the solution to $|x + 3| > 5$ graphically. Today, we will learn how to find it algebraically.



Page 3

In the "Can I Graph You Too?" activity, we found the solution to $|x| < 5$ graphically. Today, we will learn how to find it algebraically.



Page 2

GO

$ w + 2 \geq 5$	$ c + 7 > 9$
Left	Right
$w + 2 \leq -5$ $-2 \quad -2$	$w + 2 \geq 5$ $-2 \quad -2$
$w \leq -7$ or $w \geq 3$	$c + 7 < -9$ $c + 7 > 9$ $-7 \quad -7$ $-7 \quad -7$ $c < -16$ or $c > 2$

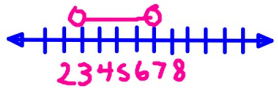


Page 4

AL

$$|y - 5| < 2$$

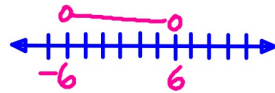
Left	Right
$y - 5 > -2$	$y - 5 < 2$
$\downarrow +5 \quad +5$	$\downarrow +5 \quad +5$
$y > 3$	and $y < 7$
$3 < y < 7$	



Page 5

$$|6.5x| < 39$$

Left	Right
$\frac{6.5x}{6.5} > \frac{-39}{6.5}$	$\frac{6.5x}{6.5} < \frac{39}{6.5}$
$x > -6$	and $x < 6$
$-6 < x < 6$	



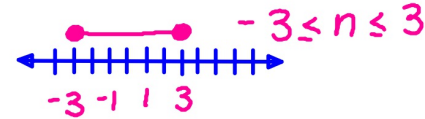
GOAL

$$|-3n| - 2 \leq 7$$

$$\quad +2 \quad +2$$

$$|-3n| \leq 9$$

Left	Right
$\frac{-3n}{-3} \geq \frac{-9}{-3}$	$\frac{-3n}{-3} \leq \frac{9}{-3}$
$n \leq 3$	and $n \geq -3$



Page 6

$$|n| - 3 \geq 7$$

$$\quad +3 \quad +3$$

$$|n| \geq 10$$

Left	Right
$n \leq -10$	or $n \geq 10$



Homework:

page 170 #23-34 and 52-55