Algebra 1 5.5

distance

Solve and graph absolute value inequalities

Write an absolute value inequality from a graph

$| \quad | = 5$

inequality

absolute value

less than $<$ $\leq$

greater than $>$ $\geq$

floor graphs

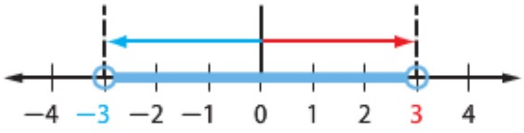
whiteboards

$|5| = 5$

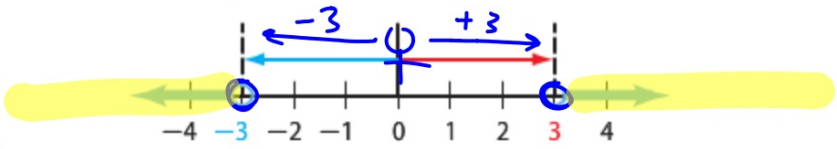
$|-5| = 5$

Find the landmarks
Less than = Closer <
Greater than = Farther >
open or closed?

1 Absolute Value Inequalities (<) The inequality $|x| < 3$ means that the distance between x and 0 is less than 3.



2 Absolute Value Inequalities (>) The inequality $|x| > 3$ means that the distance between x and 0 is greater than 3.



$|x| > 3$ $x < -3$ or $x > 3$

$-3 < x > 3$

$x = -3$ $x = 3$

whiteboards

Sol[ ]h ine[ ]ality. Then grap[ ] sol[ ]on set.

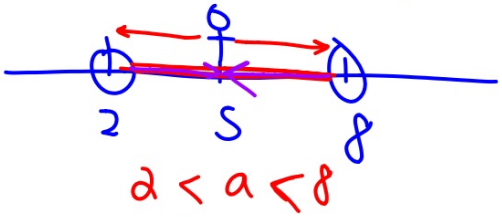
1. $|a-5|<3$

2. $|u+3|<7$

Bubble
Closer or farther?
What's in the middle?

$a-5=-3$
$+5 \quad +5$
$a=2$

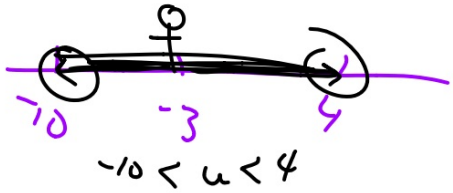
$a-5=3$
$+5 \quad +5$
$a=8$



$2<a<8$

$u+3=-7$
$-3 \quad -3$
$u=-10$

$u+3=7$
$-3 \quad -3$
$u=4$



$-10<u<4$

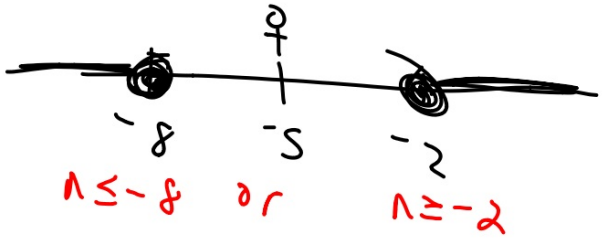
4. $|c + 2| > -2$

NS

5. $|n + 5| \geq 3$

$n + 5 = -3$
$-5 \quad -5$
$n = -8$

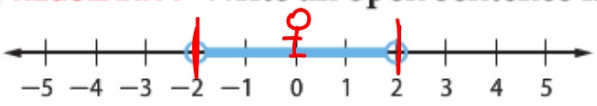
$n + 5 = 3$
$-5 \quad -5$
$n = -2$



$n \leq -8$ or $n \geq -2$

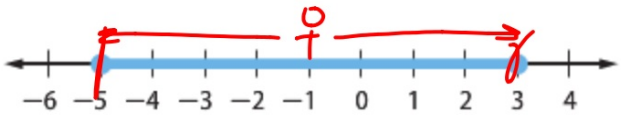
CCSS **REGULARITY** **Write an open sentence involving absolute value for each graph.**

32.



$|x - 0| < 2$

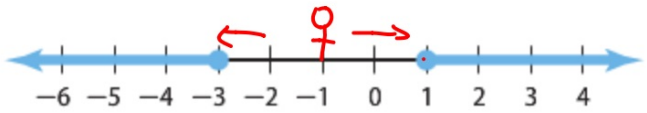
What's in the middle?
Landmarks?
Closer or farther?

33. 

$-\frac{5+3}{2}$ $|x--1|$

$-\frac{2}{2}$ $|x+1| \leq 4$

34.



$|x - -1| \quad 2$

$|x+1| \geq 2$

35. 

$\frac{10+1}{2}$ $|x-5.5| > 4.5$

WB S.S prac.
1 – 13