Solving Absolute value Inequalities

Ex: $|x| < 7$

$x < 7$ and $x > -7$

Ex: $|x+4| < 10$

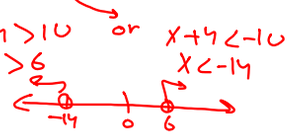
$x+4 < 10$
$-4 \quad -4$
$x < 6$ and $x+4 > -10$, $x > -14$

Ex: $|x| > 7$

$x > 7$ or $x < -7$

Ex: $|x+4| > 10$

$x+4 > 10$ or $x+4 < -10$
$x > 6$ $\quad$ $x < -14$



Absolute Inequalities

<

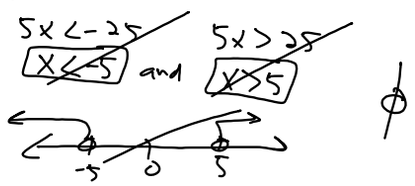
① Solve w/o | |
② Solve w/o | |, but change inequality (<) and the sign after the = sign
③ And → Common to both soln

>

① Solve w/o | |
② Solve w/o | |, but change inequality (>) and the sign after the equal = sign
③ Or → Either, or

Ex: $|5x| < -25$

$5x < -25$ and $5x > 25$
$x < -5$ $\quad$ $x > 5$



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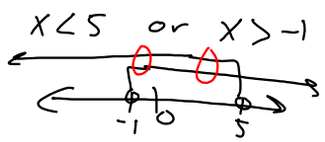
Ex: $x-4 < 1$ or $x+2 > 1$

$x < 5$ or $x > -1$



all Reals

HW P353
Prob: 27-38