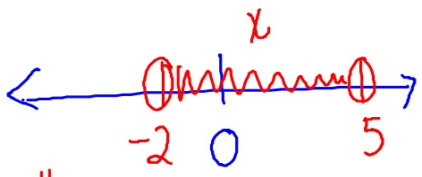
May 11 Compound Inequalities

Graph: $x \geq 2$ or $x \leq -5$

Graph $-2 < x < 5$



"-2 is less than x and x is less than 5"

$-2 < x$ and $x < 5$

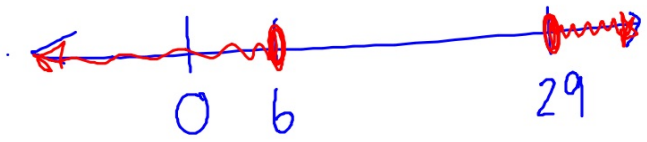
$x > -2$ and $x < 5$

Ex 1 $-3x+5 \geq -13$ OR $2(x-4) \geq 50$

$-3x \geq -18$ | $2x-8 \geq 50$

$2x \geq 58$

$x \leq 6$ OR $x \geq 29$



Ex 2 $-2 < \frac{2}{3}x + 4 < 8$

$3(-2) < 3\left(\frac{2}{3}x + 4\right)$ and $3\left(\frac{2}{3}x + 4\right) < 3(8)$

$-6 < 2x + 12$ | $2x + 12 < 24$

$-18 < 2x$ | $2x < 12$

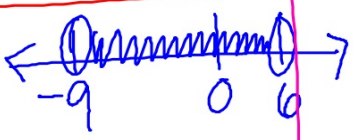
$\frac{-18}{2} < \frac{2x}{2}$ | $\frac{2x}{2} < \frac{12}{2}$

$-9 < x$ | $x < 6$

$x > -9$

and

$-9 < x < 6$



$3(-2 < \frac{2}{3}x + 4 < 8)$

$-6 < 2x + 12 < 24$

$-12 \quad -12 \quad -12$

$\frac{-18}{2} < \frac{2x}{2} < \frac{12}{2}$

$-9 < x < 6$