# Math 418!

$418! \approx 6.7 \cdot 10^{915}$

david.benson@unh.edu

Inequality involves $<, \leq, >$ or $\geq$

Ex: ① $2 < 4$

② $x \leq 3$ ←

③ $x^2 + x < 4$

④ $|x+3| \geq 2$

$x = 3$

$x^2 + x = 4$

$|x+3| = 2$

Solving an inequality:

$2x > 5$

$x > \frac{5}{2}$

$-3x \leq 4$

$x \geq \frac{-4}{3}$

When Mult./Divide by a neg.

you MUST! switch direction of ineq.

$2 < 4$

$\frac{1}{2} > \frac{1}{4}$

$\|$ $\|$

$.5$ $.25$

Solve $2x+3 \geq 6$

$2x \geq 3$

$\boxed{x \geq \frac{3}{2}}$

X #

Solve $3x-7 > 8x-1$

$3x > 8x+6$

$-5x > 6$

$\frac{-6}{5} > x$ $\boxed{x < \frac{-6}{5}}$

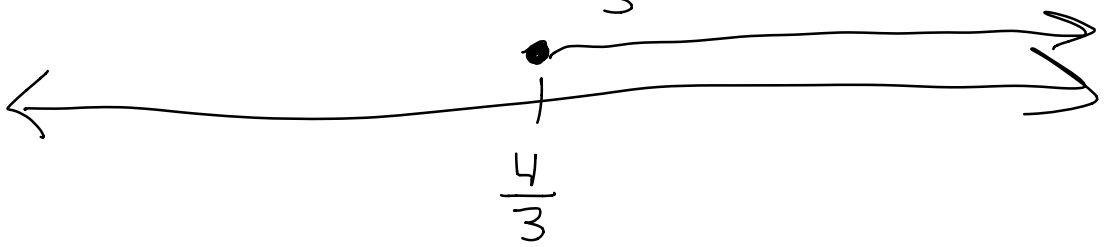
$\frac{-6}{5}$

Not Zero

○ = Not included

● = included

$x \geq \frac{4}{3}$




To Do:

Solve: ① $3x - 9 < 8x + 4$

and Plot: ② $x - 1 < x + 1$

③ $9x > -5x + 2$

---

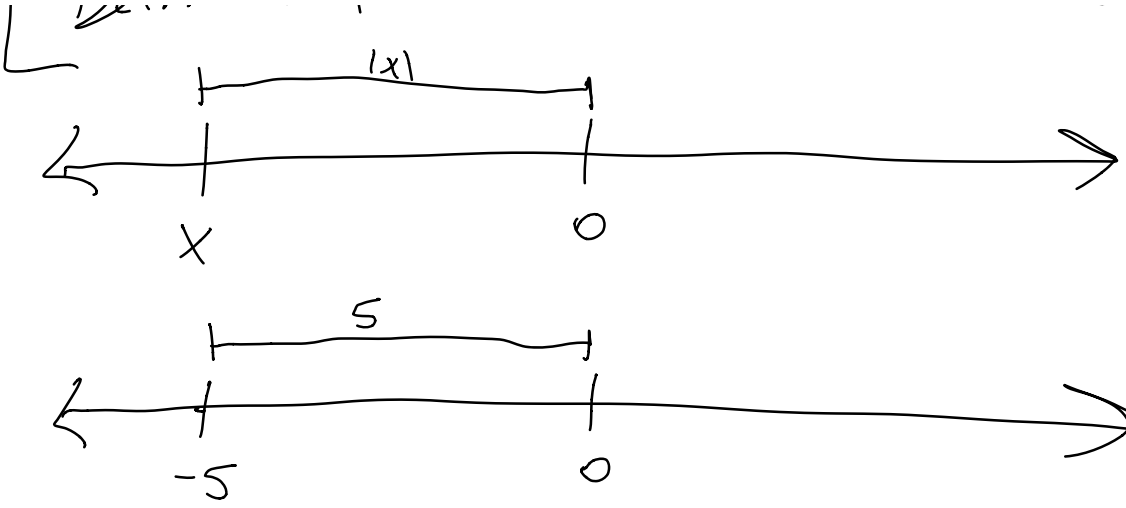
## Absolute Value

$|x|$ = Abs. Value of $x$

$|-5| = 5$

$|100| = 100$

Math: $|x|$ = distance from $x$ to 0.




Def'n: $|x| = \sqrt{x^2}$

$|-5| = \sqrt{(-5)^2} = \sqrt{25} = 5$

$|2x+1| = 3$

$2x+1$