Solving Linear and Absolute value equations:

Ex: \(2(x + 3) - 9 = 2x\) \[|x-2|=17\]

Solving by Clearing Fractions using the LCD (yes, find the LCD!!!):

\[
\frac{7}{10}(x - 3) + \frac{5x}{8} = 3x + \frac{2}{3}
\]

Let's do this together .... Using a grapher to solve the above equation together:

Solve \(
\]

A tricky problem (if you use your previous rules):

\[|x| = 2x + 1\]

The best method when you have two different function types for expressions is to graph both expressions.
Absolute Value Inequalities:

Rewrite as a **compound** inequality in order to drop the absolute value. Think about the meaning!!

ex: Solve for x {x : |x + 1| < 4}

ex: {x : |2x - 5| ≥ 1}

|x| < a means ______________

|x| > a means ______________

But be careful of rule (or algorithm) memorizing! If you don’t understand the rule, you may solve incorrectly:

|x + 3| > -2

|4x - 9| ≤ -7

• If you are forced to multiple or divide by a negative number you need to ____________________________.

If you are multiplying or dividing by an expression, you need to know if that expression is positive or negative. Try the one below, thinking about the sign of a.

Ex: Solve for x, where a<1

\[
x + \frac{x - 1}{a + 1} \geq \frac{x + 1}{a + 1} - ax
\]