

# SOLVING LINEAR INEQUALITY

NOTE: AT ANY STEP COMBINE LIKE TERMS AND COMBINE NUMBERS

1. GET RID OF PARENTHESES (VIA THE DIST. PROP.)

2. GET RID OF FRACTIONS (MULTIPLY EVERYTHING BY THE LCM OF ALL THE DENOMINATORS)

3. GET EVERYTHING WITH AN X ON LEFT SIDE, NUMBERS ON RIGHT SIDE

4. DIVIDE BOTH SIDES BY THE NUMBER IN FRONT OF THE X

NOTE: IF YOU MULTIPLY OR DIVIDE BOTH SIDES

BY A NEGATIVE NUMBER, FLIP THE INEQUALITY SYMBOL

5.  $3x - 2 < 13$

$$3x < 13 + 2$$
$$3x < 15$$
$$\frac{3x}{3} < \frac{15}{3}$$
$$x < 5$$

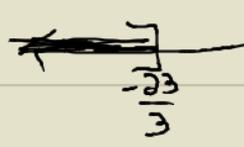
$(-\infty, 5)$



6.  $10x + 35 \leq 4x - 11$

$$10x - 4x \leq -11 - 35$$
$$6x \leq -46$$
$$\frac{6x}{6} \leq \frac{-46}{6}$$
$$x \leq -\frac{23}{3}$$

$(-\infty, -\frac{23}{3}]$



7.  $-8(x+3) > 3x+20$

$$-8x - 24 > 3x + 20$$
$$-8x - 3x > 20 + 24$$
$$-11x > 44$$
$$\frac{-11x}{-11} < \frac{44}{-11}$$
$$x < -4$$

$(-\infty, -4)$

