# Macintosh HD:Users:Amit:Progs:ExcelerateLive:HTML:ml.png Excelerate Lesson Plan

**Solving Inequalities**

**About These Problems**

**An inequality is just a representation of a range of numbers that satisfy an equation rather than just one solution. Many of these will be coupled with absolute values. In which case you should solve twice; once normally and once by flipping the sign of the variable. If this seems confusing refer to the first example below.**

**x<y : x is less than y**

**x>y : x is greater than y**

**x<y : x is less than or equal to y**

**x>y : x is greater than or equal to y**

**Question.**  Solve for x.

3|x| + 17 < 23

1. x < 12 and x > -12
2. x < 5 and x < -5
3. x < 2 and x > -2
4. x < 3 and x > -3
5. x < 6 and x > -6

**Answer.** **4**: Remember that sign is irrelevant in absolute value scenarios. So solving for x we get |x| < 2. Now we have two corresponding equations. If this method is confusing you can always try a number in all 5 options and compare to the inequality if it fits.

Regular equation: x < 2.

Flipped equation: -x < 2 -> x > 2

Answer x < 2 and x > -2.