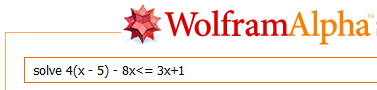
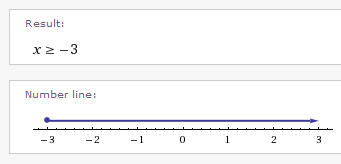
**Linear Inequalities and Sets with WolframAlpha**

WolframAlpha will solve inequalities using the same *solve* command used for equations.

Example 1: Solve 



The inequality symbol  is input as <=.



We would write the solution in interval notation:



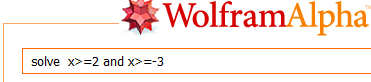
The graph on the number line shows a closed circle on –3 indicating the point is included.

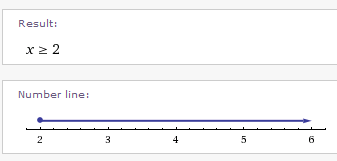
Solve and check your answer with WolframAlpha.

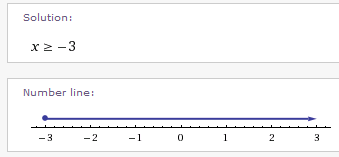
1.  2. 

Compound inequalities may be input into WolframAlpha using *and* or *or* .

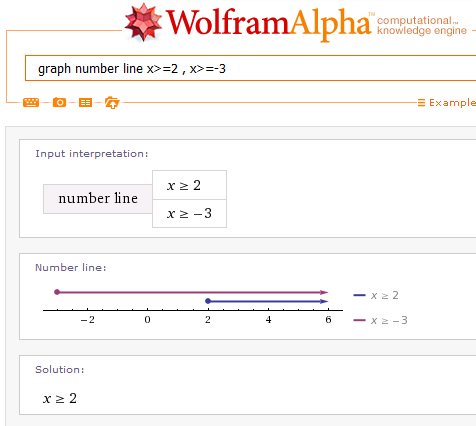
Example 2: Solve  Example 3: Solve 







Solution:  Solution: 

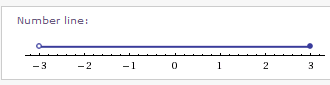
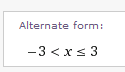


If we leave out leave out the command to solve and ask for the inequalities to be graphed on a number line we still get a solution.

WolframAlpha (unhelpfully) assumes we must be looking for the intersection and supplies that solution.

Enter three-part compound inequalities in WolframAlpha without the *solve* command.

Example 4: Solve 



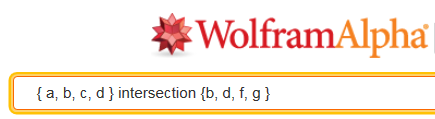
The solution will be found under *Alternate form*. Solution: 

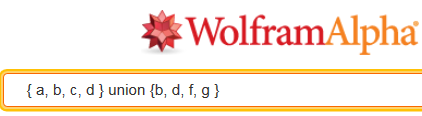
Solve the compound inequality. Check your answer using WolframAlpha.

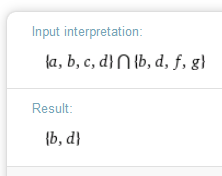
3.  4. 

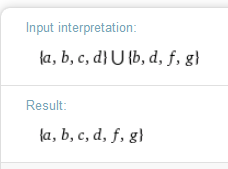
To find the union or intersection of sets in WolframAlpha, use the words *union* or *intersection* (or *intersect*).

{ ... } Union { ... } { ... } Intersection { ... }

Example 5: Given A ={ a, b, c, d }, B = {b, d, f, g }, and C = { a, c, e } find A B and B C.







Find the union or intersection as indicated, given the following sets. Use WolframAlpha to check your answer.

A = {1, 2, 3, 4, 5, 6} B = { 3, 6, 9} C = { 2, 4, 6, 8}

5. A B 6. A B C 7. A B C