

Algebra 1
Writing and Solving Inequalities

6-topic bundle | 576 problems | Four activity formats

01 Writing Inequalities from Word Problems

View individual product and its full preview

02 Addition and Subtraction Inequalities

View individual product and its full preview

03 Multiplication and Division Inequalities

View individual product and its full preview

04 Two-Step Inequalities

View individual product and its full preview

05 Multi-Step Inequalities

View individual product and its full preview

06 Compound Inequalities

View individual product and its full preview

In every topic

Answer Bank Challenge	24 tasks
Grid Rounds	24 tasks
Match & Move	24 cards
Error Analysis & Strategy	24 tasks
Quick Answer Key and Full Worked Solutions	included
Teacher / Parent Use Guide and Terms of Use	included

Product previews

The following preview pages show the cover, all four activity formats, and worked examples for each included resource, in the listed order.

48 PDFs and 6 READMEs; 295 buyer PDF pages across the 6 products.

Preview pages are not included in the buyer page count. Check the list against resources you already own.

This is a fixed collection of the listed products. Purchase includes the existing individual resource files. To open a product's online preview, follow its title link and select View Preview.

Algebra 1
Writing Inequalities from Word Problems

Writing Linear Inequalities from Context | A1-U03-P01

96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
07	Teacher / Parent Use Guide	included
08	Terms of Use & License	included

Topic focus
Across 96 tasks this topic asks for inequality interpretation with boundary justification and method choice with justification, followed by inequality interpretation with boundary justification.
8 PDFs and a README; 53 buyer pages.

Algebra 1

Writing Inequalities from Word Problems

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. A value without its unit is not a complete answer.

A student remains eligible only while the absence count a has not reached 5. Write the direct comparison. Bank label: _____	Give an equivalent comparison to $m \leq 0$ that begins with 0. Bank label: _____					
A review is assigned when q, the number of missed questions, is 12 or fewer. Write the inequality. Bank label: _____	Test $q = \frac{1}{2}$, $q = \frac{3}{4}$, and $q = 1$ against $q > \frac{3}{4}$. <table border="1" data-bbox="824 840 1469 968"> <thead> <tr> <th>Proposed value</th> </tr> </thead> <tbody> <tr> <td>$\frac{1}{2}$</td> </tr> <tr> <td>$\frac{3}{4}$</td> </tr> <tr> <td>$\frac{4}{4}$</td> </tr> <tr> <td>1</td> </tr> </tbody> </table> Bank label: _____	Proposed value	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{4}{4}$	1
Proposed value						
$\frac{1}{2}$						
$\frac{3}{4}$						
$\frac{4}{4}$						
1						
A lift may carry its full 900-kilogram rating but nothing heavier. Write the constraint for load w. Bank label: _____	Express $8 < x$ with x first. Bank label: _____					
Test $y = -0.1$, $y = 0$, and $y = 0.1$ in $y > 0$. <table border="1" data-bbox="151 1497 797 1619"> <thead> <tr> <th>Proposed value</th> </tr> </thead> <tbody> <tr> <td>-0.1</td> </tr> <tr> <td>0</td> </tr> <tr> <td>0.1</td> </tr> </tbody> </table> Bank label: _____	Proposed value	-0.1	0	0.1	If k is an integer and $k \geq -3$, identify the boundary's status and the least possible k. Bank label: _____	
Proposed value						
-0.1						
0						
0.1						

Algebra 1

Writing Inequalities from Word Problems

Name: _____ Date: _____ Class: _____

Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: $T > -3$. A specification says, 'A reading of -5 is no greater than the signed change c.' Express the permitted c-values with c on the left and explain equality. Your response: _____	Incoming: $c \geq -5$, with -5 included. A signed change c is required to be at most -4. State the inequality and do not replace the negative bound with a magnitude. Your response: _____
Incoming: $t \geq 12$. A temperature T exceeds -3 degrees Celsius. State the inequality, keeping the negative boundary. Your response: _____	Incoming: $-6 \geq c$. A reservation permits a maximum of 9 guests. Write a direct bound for g, the guest count. Your response: _____
Incoming: $L > 6.2$. Rewrite $0 \geq h$ with h as the subject on the left. Your response: _____	Incoming: $s \geq 86$. Rewrite $x < 7$ with 7 on the left while preserving exactly the same permitted x-values. Your response: _____

Algebra 1

Writing Inequalities from Word Problems

Name: _____ Date: _____ Class: _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

Choose the most reliable method, briefly justify the choice, and then complete the original task. Original task: For $p \leq 250$, determine the status of $p = 0$, $p = 250$, and $p = 251$.

Proposed value
0
250
251

Label	Proposed method
A	Substitute each proposed value into the original comparison and evaluate both sides.
B	Compare only the absolute values and ignore the comparison symbol.
C	Decide only from how close each value is to the boundary.

For real x , compare $x > 2$ and $x \geq 2.5$. Which condition is stronger, and what value separates them?

Writing Inequalities from Word Problems

Full Worked Solutions - excerpt

Worked example

Problem. A student remains eligible only while the absence count a has not reached 5. Write the direct comparison.

Answer. $a < 5$.

Explanation and check.

Counts 0 through 4 have not reached five; equality at five fails.

Worked example

Problem. Give an equivalent comparison to $m \leq 0$ that begins with 0.

Answer. $0 \geq m$.

Explanation and check.

Zero being greater than or equal to m says exactly that m is at most zero.

Algebra 1

Addition and Subtraction Inequalities

Addition and Subtraction Inequalities | A1-U03-P02

96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
07	Teacher / Parent Use Guide	included
08	Terms of Use & License	included

Topic focus

Across 96 tasks this topic asks for solution inequality with order-preservation justification and solution inequality with order-preservation justification; justified method selection.

8 PDFs and a README; 48 buyer pages.

Algebra 1

**Addition and
Subtraction Inequalities**

Name: _____ Date: _____ Class: _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

A student solves $x - 2.5 \geq -1$ as $x \geq -3.5$ by subtracting 2.5 again. Diagnose and correct.

A tenth-scaled graph proposes $x \leq -3$ for $x + 2.25 \leq -0.75$. Audit its endpoint and sides.

A proposed solution to $x - 5 \leq -2$ is $x \geq 3$. Evaluate 2, 3, and 4 to locate the direction error.

A student correctly chooses $a + 3$ translation for $x - 3 > -8$ but reverses the symbol and tests only $x = -6$. Explain why that test is misleading and repair the ray.

Addition and Subtraction Inequalities

Full Worked Solutions - excerpt

Worked example

Problem. Recover k so that $k < x + 2$ has solution $x > 6$.

Answer. $k = 8$.

Explanation and check.

Subtracting 2 gives $k - 2 < x$. The lower boundary $k - 2$ must be 6, so $k = 8$.

Worked example

Problem. Choose a so $2.4 \geq x + a$ has the upper boundary -0.6 .

Answer. $a = 3$.

Explanation and check.

Solving gives $x \leq 2.4 - a$. Requiring $2.4 - a = -0.6$ yields $a = 3$.

Algebra 1
Multiplication and Division Inequalities

Multiplication and Division Inequalities | A1-U03-P03

96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
07	Teacher / Parent Use Guide	included
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Topic focus
Across 96 tasks this topic asks for allowable scale with identifiability explanation, allowable scale with identifiability explanation; justified method selection, first error and repaired reasoning, reversed comparison with justification, reversed comparison with justification; justified method selection and set relationship with decisive witness.
8 PDFs and a README; 47 buyer pages.

Algebra 1

Multiplication and Division Inequalities

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. Give the whole requested response, including any reasoning the question asks for.

Choose k so $kx > -9$ is equivalent to $x > -6$. _____ Bank label: _____	Determine r so x divided by r at most $\frac{3}{4}$ has boundary $\frac{9}{8}$. _____ Bank label: _____
Determine a so that $ax \leq 18$ produces the target $x \geq -6$. _____ Bank label: _____	Solve $(-\frac{5}{12})x \leq -\frac{35}{18}$ and simplify the exact boundary. _____ Bank label: _____
Determine the x-first solution of $-\frac{5}{2} \geq x$ divided by -3. _____ Bank label: _____	Solve $-7 < -x$ without losing the strict endpoint. _____ Bank label: _____
Solve $-0.06x \geq 0.9$ exactly. _____ Bank label: _____	Find the solution set of $(\frac{13}{6})x \geq 0$. _____ Bank label: _____

Algebra 1

Multiplication and Division Inequalities

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. Give the whole requested response, including any reasoning the question asks for.

Starting from $m < n$, scale by -2 and then by -3. Track each reversal and give the final comparison. _____ _____	Find p so $px > \frac{5}{6}$ yields the target $x < -\frac{10}{3}$. _____ _____
Verify $x \leq 6$ as the solution of $18 \geq 3x$. _____ _____	Solve $ax < 6$ for every possible sign of a, including $a = 0$. _____ _____
Isolate x in $8x \leq 8$. _____ _____	What changes when $-3x \leq 12$ is made strict? _____ _____

Algebra 1

Multiplication and Division Inequalities

Name: _____ Date: _____ Class: _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

A claimed solution of $-0.25x < 3$ is $x < -0.75$. Diagnose it using the true equality input and simple witnesses.

A student claims multiplying $1 < 3$ by -2 gives $-2 < -6$. Test the claim and repair it.

Use the test values $x = -8$, $x = -9$, and $x = 0$. A proposed answer for $(-\frac{3}{4})x > 6$ is $x > -8$. Use the listed values to audit its direction.

A student starts with $-2x \leq 14$, divides by -2 and reverses to $x \geq -7$, then reverses again because the boundary is negative and writes $x \leq -7$. The work reverses once for a negative divisor and again because the boundary is negative. Locate the first invalid line after the correct step.

Multiplication and Division Inequalities

Full Worked Solutions - excerpt

Worked example

Problem. Choose k so $kx > -9$ is equivalent to $x > -6$.

Answer. The scale is $k = \frac{3}{2}$.

Explanation and check.

The direction is preserved, so $k > 0$. Solving $-\frac{9}{k} = -6$ yields $k = \frac{3}{2}$.

Worked example

Problem. Determine r so x divided by r at most $\frac{3}{4}$ has boundary $\frac{9}{8}$.

Answer. The divisor is $r = \frac{3}{2}$.

Explanation and check.

The unchanged orientation requires $r > 0$; $(\frac{3}{4})r = \frac{9}{8}$ gives $r = \frac{3}{2}$.

Algebra 1
Two-Step Inequalities

Two-Step Inequalities | A1-U03-P04
96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
07	Teacher / Parent Use Guide	included
08	Terms of Use & License	included

Topic focus
Across 96 tasks this topic asks for accepted or repaired set with boundary and witnesses, construction satisfying all constraints with verification, first error and corrected chain, solution after order-safe denominator clearing, solution after value-preserving expansion and solution set with connected inverse steps.
8 PDFs and a README; 50 buyer pages.

Algebra 1

Two-Step Inequalities

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. A value without its unit is not a complete answer.

Solve $-2\frac{n}{3} + \frac{1}{4} \geq \frac{11}{12}$ for integer n. _____ Bank label: _____	Find the x-values for $-6x - 5 > 13$. _____ Bank label: _____
Solve x divided by negative 5 minus 1 greater than 2. _____ Bank label: _____	Find the solution of $\frac{5-2x}{3} - \frac{x+1}{4} > \frac{1}{6}$. _____ Bank label: _____
Clear denominators in $3\frac{x}{4} - \frac{x}{6} \geq 7$ and solve. _____ Bank label: _____	Solve x divided by negative $\frac{5}{4}$ plus 3 at least -1. _____ Bank label: _____
Expand $-2(3x - 4)$ and solve the inequality. Use the inequality $-2(3x - 4) \geq 20$. _____ Bank label: _____	Expand both groups in $5(2x - 1) - 3(x + 4) \geq -3$ and solve. _____ Bank label: _____

Algebra 1

Two-Step Inequalities

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

Construct an inequality with coefficient 3 and a nonzero negative offset whose solution is $x < 4$. _____ _____	What is the solution set of $5(2-x) + 5x > 10$? _____ _____
Solve $\frac{x-1}{2} + \frac{x+2}{3} < 5$. _____ _____	Construct an inequality using the group $x - 1$ and outer factor 2 that solves to $x > 5$. _____ _____
Verify $x < -5$ for $(-\frac{3}{5})x + 2 > 5$. _____ _____	For integer n, verify $n \geq 3$ as the solution of $\frac{2n-1}{3} > \frac{5}{4}$. _____ _____

Algebra 1

Two-Step Inequalities

Name: _____ Date: _____ Class: _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

Compare two order-safe routes for $-\frac{x}{3} + \frac{1}{2} \geq \frac{5}{6}$.

Proposed route A: multiply every term by positive 6. Proposed route B: isolate $-\frac{x}{3}$, then multiply by -3.

For integer n , compare both complete routes for $(-\frac{4}{3})n + \frac{1}{2} > \frac{5}{6}$.

Proposed route A: clear by positive 6, solve, then restrict. Proposed route B: isolate the fraction, use a signed reciprocal, then restrict.

Audit $x \leq \frac{5}{2}$ for $\frac{x}{3} + \frac{1}{2} \leq \frac{5}{6}$.

Compare clearing denominators first with isolating $\frac{x}{2}$ first.

Use $\frac{x}{2} + \frac{1}{3} < \frac{7}{3}$. Proposed route A: multiply every term by 6. Proposed route B: subtract $\frac{1}{3}$, then multiply by 2.

Two-Step Inequalities

Full Worked Solutions - excerpt

Worked example

Problem. Solve $-2\frac{n}{3} + \frac{1}{4} \geq \frac{11}{12}$ for integer n .

Answer. The integer set is $n \leq -1$.

Explanation and check.

Multiplying by 12 yields $-8n + 3 \geq 11$, so $-8n \geq 8$ and $n \leq -1$.

Worked example

Problem. Find the x -values for $-6x - 5 > 13$.

Answer. The solution is $x < -3$.

Explanation and check.

Adding 5 produces $-6x > 18$; division by -6 reverses $>$ and yields -3 .

Algebra 1
Multi-Step Inequalities

Solving Multi-Step Linear Inequalities | A1-U03-P05

96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
07	Teacher / Parent Use Guide	included
08	Terms of Use & License	included

Topic focus
Across 96 tasks this topic asks for classified solution set with net-coefficient reasoning and classified solution set with net-coefficient reasoning; justified method selection.
8 PDFs and a README; 49 buyer pages.

Algebra 1

Multi-Step Inequalities

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. A value without its unit is not a complete answer.

Solve $1.5(x + 2) < 0.5(x + 8)$. _____ Bank label: _____	Solve the strict decimal identity. The inequality is $1.2(5x - 1) > 6x - 1.2$. _____ Bank label: _____
Solve $2x + 7 > 4x - 1$. _____ Bank label: _____	Solve $0.05(20x + 4) > 0.2x + 1.8$. _____ Bank label: _____
Solve $2(x + 3) - 3(x - 1) > 4(1 - x)$. _____ Bank label: _____	Solve $-1.2x + \frac{3}{5} \leq 0.4x - \frac{13}{5}$. _____ Bank label: _____
Solve $-2x + 3 < -5x + 18$. _____ Bank label: _____	Find all x satisfying $5 - 2(x + 1) > x - 6$. _____ Bank label: _____

Algebra 1

Multi-Step Inequalities

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

Construct a strict both-side inequality true for every x. Use these original construction conditions: equal variable coefficients; strict true constants.	Construct a strict both-side inequality with empty solution set. Use these original construction conditions: identical expressions; strict symbol.
Construct a fraction inequality whose integer solutions are $n \geq 2$. Use these original construction conditions: fraction coefficients; real boundary $\frac{3}{2}$; strict.	For integer n, classify the inequality. The inequality is $3n + 5 \leq 3(n + 2)$.
Determine all a-cases. The inequality is $(a - 1)x + a > 2x + 5$.	Construct a time inequality giving $0 \leq t \leq 6$. Use these original construction conditions: t nonnegative; closed upper bound; variable both sides. The target set is $0 \leq t \leq 6$ hours.

Algebra 1**Multi-Step Inequalities****Name:** _____ **Date:** _____ **Class:** _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

For all a , compare the two reduced routes including $a = 3$.

The inequality is $ax + 1 < 3x + 7$. Supplied route A: $(a - 3)x < 6$. Supplied route B: $(3 - a)x > -6$.

For integer n , compare the routes through the domain step.

The inequality is $5n + 1 > 2n + 10$. Supplied route A: $3n > 9$. Supplied route B: $-9 > -3n$.

Explain why the routes point to the same closed ray.

The inequality is $-x + 4 \leq 2x + 4$. Supplied route A: $-3x \leq 0$. Supplied route B: $0 \leq 3x$.

Relate the positive- and negative-net routes.

The inequality is $7x + 1 \leq 3x + 13$. Supplied route A: $4x \leq 12$. Supplied route B: $-12 \leq -4x$.

Multi-Step Inequalities

Full Worked Solutions - excerpt

Worked example

Problem. Solve $0.07x + 0.12 > 0.02x + 0.32$.

Answer. The result is $x > 4$.

Explanation and check.

Subtract $0.02x$ and 0.12 : $0.05x > 0.20$.

Worked example

Problem. Construct a strict both-side inequality true for every x .

Use these original construction conditions: equal variable coefficients; strict true constants.

Answer. Use $5x - 2 < 5x + 7$.

Explanation and check.

Cancellation leaves $-2 < 7$.

Algebra 1
Compound Inequalities

Solving Compound Inequalities | A1-U03-P06
96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
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08	Terms of Use & License	included

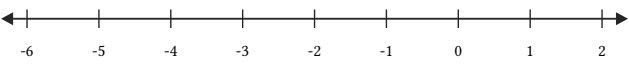
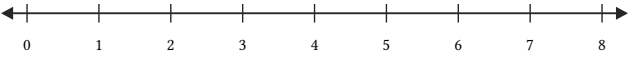
Topic focus
Across 96 tasks this topic asks for compound solution set with connector and endpoint reasoning.
8 PDFs and a README; 48 buyer pages.

Algebra 1

Compound Inequalities

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. Give the whole requested response, including any reasoning the question asks for.

Combine the conditions $((\frac{2}{3})x - 1 \geq -3)$ AND $((\frac{1}{2})x + 2 < 5)$. Find the exact common interval. Bank label: _____	Solve $x \leq 7$ AND $x < 4$. Bank label: _____
A course pass requires a grade of at least 70, unless an approved alternate assessment has been passed. Let A denote alternate passed; let g denote course grade. Model the two passing routes. Bank label: _____	Show the intersection of $x \leq -2$ and $x > -2$.  Bank label: _____
Combine the conditions $(-4 < x \leq 7)$ AND $(-4 \leq x < 6)$. Compute the exact intersection, paying attention at -4. Bank label: _____	Which scheduled hours 0, 2, 4, 6, and 8 satisfy $t < 2$ OR $t > 6$? Bank label: _____
Translate every part of $2 < x - 4 \leq 10$. Bank label: _____	Combine the conditions $(-2x \geq -8)$ OR $(-3x < -12)$. Solve and combine the rays.  Bank label: _____

Algebra 1

Compound Inequalities

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. Give the whole requested response, including any reasoning the question asks for.

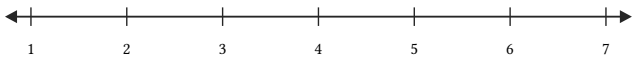
The target solution set is $(-\infty, -2]$ union $(5, \infty)$. Both displayed coefficients of x must be negative. Construct the target OR set so each component requires negative division. _____ _____	Check -5 in the condition $x < -3$ OR $x > 6$. _____ _____
Determine whether 0 belongs to $x < -4$ OR $x > 4$. _____ _____	An integer code is accepted if it is nonpositive or at least 8. Let n denote integer code. State the connector, inequalities, and domain. _____ _____
Test $x = 0$ and $x = 3$ after solving each part of $5 - 2x \geq 1$ OR $3x + 4 > 1$. _____ _____	Work with $-8 < 3x + 1 \leq 7$. Solve the mixed-endpoint chain. _____ _____

Algebra 1

Compound Inequalities

Name: _____ Date: _____ Class: _____

Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: The interval is $(3, 5]$. The allowed values are natural numbers 1 through 8. Apply the condition $5n < 10$ OR $2n \geq 12$. Solve the OR condition and list permitted natural numbers in the window. Your response: _____	Incoming: The set is $\{1, 6, 7, 8\}$. Solve $-3 < x + 2 < 5$. Your response: _____
Incoming: The set is $x < -3$ OR $x \geq 4$. Combine the conditions $(7 < 2x + 1)$ AND $(5x - 4 \leq 21)$. Solve the oppositely written bounds and graph the result.  Your response: _____	Incoming: The overlap is $[-6, 2)$. Combine the conditions $((a + 2)x \leq -a - 2)$ OR $(x > 4)$. Given $a > -2$, solve the OR condition. Your response: _____
Incoming: The set is $\{1, 2, 3, 5, 6, 7\}$. Rewrite $7 > 2x - 1 \geq -5$ in increasing order and solve. Your response: _____	Incoming: The interval is $-1 \leq x < 3$. Solve $-2 < -x \leq 5$ and write the bounds in increasing order. Your response: _____

Algebra 1**Compound Inequalities****Name:** _____ **Date:** _____ **Class:** _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

For $x > -5$ OR $x \geq 2$, a student keeps only $x \geq 2$, claiming that the stricter bound must be used. Explain why 'stricter' is the wrong union rule.

Admission is free for children under 5 or for members who are at least 65. Let a denote age in years; let m denote membership status. Translate the two eligibility routes without treating age alone as sufficient in the second route. Explicitly select AND or OR (including any nested connector), and justify why that logic matches the stated conditions.

Let A be the condition $x < 0$ and B the condition $x > 0$. Edit B to $x \geq 0$ and compare before and after.

For integer n , let A be the condition $n < 3.5$ and B the condition $n \leq 3$. Compare AND and OR over the stated integer domain.

Compound Inequalities

Full Worked Solutions - excerpt

Worked example

Problem. Combine the conditions $((\frac{2}{3})x - 1 \geq -3)$ AND $((\frac{1}{2})x + 2 < 5)$. Find the exact common interval.

Answer. The solution is $x \geq -3$ AND $x < 6$, or $[-3, 6)$.

Explanation and check.

Solving the fraction inequalities gives the two stated bounds.

Worked example

Problem. Solve $x \leq 7$ AND $x < 4$.

Answer. The result is $x < 4$.

Explanation and check.

The strict bound at 4 is the more restrictive upper condition.