

Algebra 1
Two-Step Inequalities

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

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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: _____

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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 $\frac{2n-1}{3} > \frac{5}{4}$. _____ _____

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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 .