

Two-Step Equations

Algebra 1 | 24 problems | 8 pages

Start here

This free sample includes the complete Grid Rounds activity from the 96-problem Two-Step Equations resource. You can use this activity on its own. These are the same 24 Grid Rounds problems included in the paid resource.

Find the pages

In the combined PDF: page 1 is this guide; pages 2-5 contain all 24 student problems; page 6 is the Grid Rounds Quick Answer Key; pages 7-8 contain the Terms of Use and License. The original page numbers remain on the source pages.

Print and assign

Print on US Letter at Actual size / 100%. Give students only the four activity pages. Keep the answer key separate. Each activity page has six problems and workspace; assign one page or spread the complete activity across sessions.

Student directions

Ask students to read each prompt and show their reasoning. Keep answers exact unless a prompt supplies a decimal, include required units, and complete requested checks. The printed prompts provide the task directions.

Check the work

Use the Grid Rounds Quick Answer Key for the matching printed problem number (1-24). The key gives concise answers, not worked explanations. Full Worked Solutions and the other three activities from the paid resource are not part of this free sample.

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Algebra 1

Two-Step Equations

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.

1. Solve $-3x - 6 = -24$. Keep the result exact and verify it in the original equation. _____ _____	2. Solve $8x - 5 = -29$. Keep the result exact and verify it in the original equation. _____ _____
3. The complete rule is input $x \rightarrow$ multiply by $-4 \rightarrow$ add $7 \rightarrow$ output 19. What input produced the stated output? Include the intermediate value in your verification. _____ _____	4. Use the given equation $64 - 5x = 24$ for this initial-minus-use situation: x measures operating intervals in hours; 64 is the initial amount and 5 is removed per unit of x. Recover x and explain both inverse steps. _____ _____
5. The conversion rule has already been modeled as $(\frac{9}{5})x + 32 = 77$; x is the input temperature; the conversion multiplies by $\frac{9}{5}$ and then shifts by 32. Find the source value x in degrees and check by converting forward. _____ _____	6. Solve $-5(x - 4) = 35$ by reversing the outer operation before the inner shift. _____ _____

Algebra 1

Two-Step Equations

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.

7. Isolate x in $17 - 6x = -7$, preserving the equality at every step. _____ _____	8. Solve $8(x - 9) = -16$ without distributing. Verify the exact result. _____ _____
9. The conversion rule has already been modeled as $(\frac{4}{3})x - 5 = 11$; x is the source measure; the conversion multiplies by $\frac{4}{3}$ and then shifts by -5. Find the source value x in meters and check by converting forward. _____ _____	10. In the supplied fixed-plus-variable relation $(\frac{7}{4})x + \frac{3}{2} = \frac{19}{2}$, x measures production batches in batches; $\frac{3}{2}$ is fixed and $\frac{7}{4}$ is the signed amount per unit of x. Determine x and state what its sign and unit mean. _____ _____
11. Use the given equation $\frac{156}{5} - (\frac{12}{5})x = 12$ for this initial-minus-use situation: x measures drain intervals in hours; $\frac{156}{5}$ is the initial amount and $\frac{12}{5}$ is removed per unit of x. Recover x and explain both inverse steps. _____ _____	12. Solve $(\frac{5}{8})x - \frac{11}{3} = -\frac{91}{24}$. Keep the result exact and verify it in the original equation. _____ _____

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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.

13. Solve $(-\frac{7}{10})x - \frac{2}{5} = -\frac{11}{4}$. State which offset is undone before the scale. 	14. Solve $\frac{x-\frac{7}{5}}{-\frac{4}{3}} = \frac{9}{2}$ without distributing. Verify the exact result.
15. Treat the parentheses as one quantity and solve $(\frac{5}{6})(x + \frac{11}{4}) = -\frac{13}{6}$. 	16. Solve $(-\frac{7}{8})(x + \frac{2}{3}) = \frac{35}{12}$ by reversing the outer operation before the inner shift.
17. Solve $(\frac{7}{12})x - \frac{13}{10} = -\frac{37}{20}$. Keep the result exact and verify it in the original equation. 	18. A supplied model is $(\frac{5}{6})x + \frac{7}{3} = \frac{17}{3}$, where x measures travel sections in kilometers; $\frac{7}{3}$ is fixed and $\frac{5}{6}$ is the signed amount per unit of x. Solve for x, interpret the result in kilometers, and verify the total.

Algebra 1

Two-Step Equations

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.

19. The conversion rule has already been modeled as $(-\frac{3}{2})x + 4 = 13$; x is the source coordinate; the conversion multiplies by $-\frac{3}{2}$ and then shifts by 4. Find the source value x in positions and check by converting forward. 	20. Solve $\frac{x+\frac{5}{9}}{-\frac{11}{6}} = -\frac{7}{4}$ without distributing. Verify the exact result.
21. Solve $-8(x + 3) = -40$ by reversing the outer operation before the inner shift. 	22. Isolate x in $(-\frac{5}{6})x + \frac{17}{12} = \frac{1}{6}$, preserving the equality at every step.
23. Use the given equation $18 - (\frac{7}{5})x = 11$ for this initial-minus-use situation: x measures discharge periods in hours; 18 is the initial amount and $\frac{7}{5}$ is removed per unit of x. Recover x and explain both inverse steps. 	24. Treat the parentheses as one quantity and solve $(\frac{3}{7})(x - \frac{8}{5}) = \frac{9}{10}$.

Grid Rounds

No.	Link	Answer
1		6
2		−3
3		−3
4		8 hours
5		25 degrees
6		−3
7		4
8		7
9		12 meters
10		$\frac{32}{7}$ batches
11		8 hours
12		$-\frac{1}{5}$
13		$\frac{47}{14}$
14		$-\frac{23}{5}$
15		$-\frac{107}{20}$
16		−4
17		$-\frac{33}{35}$
18		4 kilometers
19		−6 positions
20		$\frac{191}{72}$
21		2
22		$\frac{3}{2}$
23		5 hours
24		$\frac{37}{10}$

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