

Algebra 1 - Solving Linear Equations in One Variable - Worksheet

Common Core A-REI.A.1, A-REI.B.3, A-CED.A.1 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This worksheet has 20 problems on linear equations in one variable, aligned to Common Core A-REI.B.3 and A-CED.A.1. You will solve one-step, two-step, and multistep equations, handle variables on both sides, recognize no solution and infinitely many solutions, and model real situations. Early problems check one skill at a time; the final six put the skill inside real situations. Write each step on paper before you look at the answer key.

Algebra 1 · Common Core State Standards: **A-REI.A.1, A-REI.B.3, A-CED.A.1**

Exercise 1 - Undo addition

Solve $x + 7 = 15$.

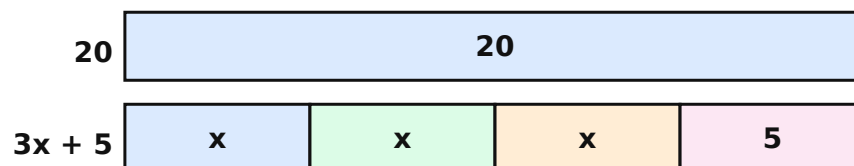
Exercise 2 - Undo multiplication

Solve $-4x = 28$.

Exercise 3 - Undo division

Solve $\frac{x}{5} = -3$.

Exercise 4 - Two steps with a tape diagram



Three equal parts plus 5 make 20.

Solve $3x + 5 = 20$.

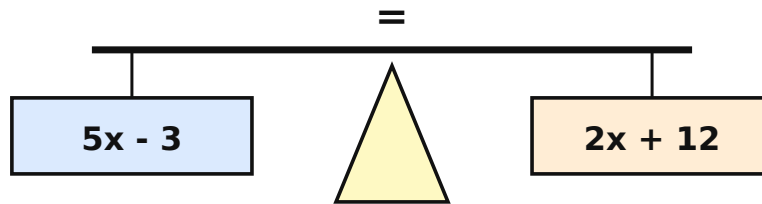
Exercise 5 - Two-step with negatives

Solve $2x - 9 = -1$.

Exercise 6 - Fraction two-step

Solve $\frac{x}{4} + 3 = 7$.

Exercise 7 - Variables on both sides



Both pans hold the same amount.

Solve $5x - 3 = 2x + 12$.

Exercise 8 - Larger coefficient on the right

Solve $4x + 7 = 9x - 13$.

Exercise 9 - Distribute once

Solve $3(x - 2) = 2x + 5$.

Exercise 10 - Distribute on both sides

Solve $2(3x + 1) = 4(x + 5)$.

Exercise 11 - Fraction coefficient

Solve $\frac{2}{3}x - 4 = 8$.

Exercise 12 - Combine like terms first

Solve $4x + 2 - x = 17$.

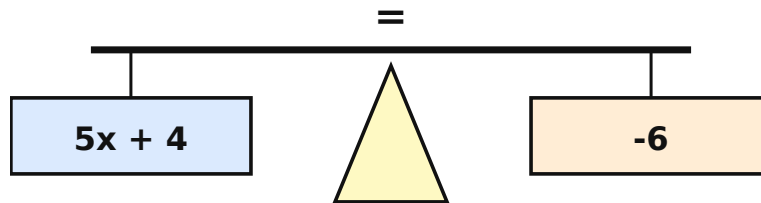
Exercise 13 - No solution

Solve $3(x + 2) = 3x + 5$. Describe the result.

Exercise 14 - Infinitely many solutions

Solve $2(x + 4) = 2x + 8$. Describe the result.

Exercise 15 - Check a solution



Test whether $x = -2$ balances the scale.

Determine whether $x = -2$ is a solution of $5x + 4 = -6$.

Exercise 16 - Concert tickets

Ethan buys 4 concert tickets at the same price and pays a \$6 parking fee. He spends \$38 in all. Write and solve an equation to find the ticket price t .

Exercise 17 - Saving for a bike

Mei has \$40 and saves \$15 each week. Write and solve an equation to find how many weeks w it takes her to have \$190.

Exercise 18 - Rides on two passes

Rides	Pass A	Pass B
5	\$35	\$25
10	\$50	\$45
20	\$80	\$85

Costs of the two passes.

Pass A at a fair costs \$20 plus \$3 per ride. Pass B costs \$5 plus \$4 per ride. Write and solve an equation to find the number of rides r for which both passes cost the same, and find that cost.

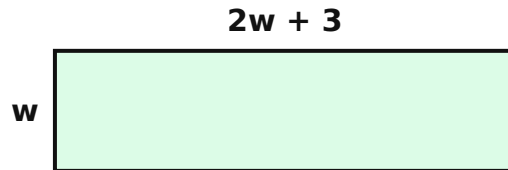
Exercise 19 - Jacket money

Aisha spent three-fifths of her money on a \$27 jacket. Write and solve an equation to find how much money m she had.

Exercise 20 - Consecutive integers

The sum of three consecutive integers is 87. Write and solve an equation, then list the integers.

Exercise 21 - Garden fence



A rectangular garden.

The length of a rectangular garden is 3 feet more than twice its width w . The perimeter is 54 feet. Write and solve an equation, then find the length and width.