

Solving Two-Step Equations: math practice, Grade 7 – download the PDF

22 problems graded by difficulty (★ easy, ★★ medium, ★★★ hard). Try first, without looking at the solutions!

1 Basic two-step equation

★ ★ ★

Solve $2x + 5 = 17$ and check your answer.

2 Subtracting first

★ ★ ★

Solve $3x - 4 = 11$.

3 Division inside

★ ★ ★

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

4 Larger numbers

★ ★ ★

Solve $7x + 2 = 51$.

5 Divide then subtract



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

6 Is it a solution?



Decide whether each value is a solution of $6x - 5 = 19$.

a. $x = 4$

b. $x = 3$

7 Two ways to start



To solve $3x + 6 = 21$, Mia subtracts 6 first. Dev says it is also fine to divide everything by 3 first. Who can be right? Solve the equation both ways.

8 Parentheses first



Solve $4(x + 3) = 44$.

9 A difference in parentheses



Solve $3(x - 5) = 21$ by dividing first.

10 Decimal coefficients



Solve $2.5x + 1.5 = 11.5$.

11 Gym membership

A gym charges a \$20 joining fee plus \$15 each month. Lena has paid \$155 in total. Write an equation and find how many months she has been a member.

12 Taxi ride

A taxi charges \$3.50 plus \$2 per mile. A ride cost \$17.50. How many miles was the ride?

13 Fraction coefficient

Solve $\frac{2}{3}x + 4 = 10$.

14 Find the error

Jo solved $5x + 10 = 45$ like this: " $5x = 35$, so $x = 35 - 5 = 30$." Find his mistake and give the correct solution.

15 Fractions on both terms

Solve $\frac{x}{2} - \frac{3}{4} = \frac{5}{4}$.

16 Fraction times a sum

Solve $\frac{3}{4}(x - 8) = 9$.

17 Temperature conversion

★★★

The formula $F = 1.8C + 32$ converts degrees Celsius to degrees Fahrenheit. A thermometer shows 77 °F. Find the temperature in °C.

18 Notebooks and a pen

★★★

Sam buys 3 identical notebooks and one pen that costs \$4.25. He pays \$13.25 in all. Write an equation and find the price of one notebook.

19 Arithmetic versus algebra

★★★

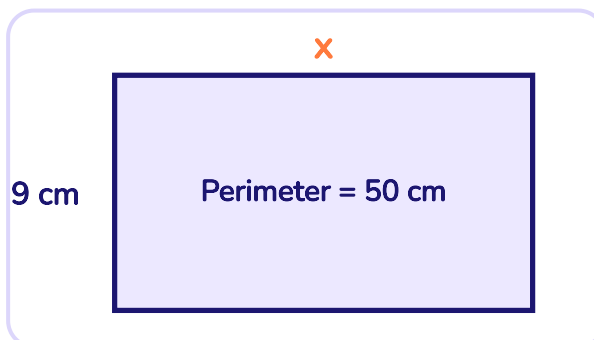
I think of a number, multiply it by 6, and subtract 9. The result is 33.

- Find the number by working backward with arithmetic only.
- Write an equation and solve it.
- Compare the two solutions.

20 Perimeter of a rectangle

★★★

A rectangle is 9 cm wide. Its length x is unknown and its perimeter is 50 cm.



Use $2(9 + x) = 50$ to find the length, then compute the area.

21 Negative coefficients



Solve each equation and check.

a. $-3x + 7 = -11$

b. $\frac{x}{-2} + 1 = 5$

22 Create a word problem



Write a word problem (with your own context) that matches the equation $4x + 6 = 30$, then solve it.



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