

Warm-Up Notes

MAT 100: ELEMENTARY ALGEBRA

Fall 2026

SECTION 2.1 SOLVE EQUATIONS USING THE SUBTRACTION AND ADDITION PROPERTIES OF EQUALITY

Install — 10 minute lesson

Objectives of this Section

- Verify a solution of an equation
- Solve equations using the Subtraction and Addition Properties of Equality
- Solve equations that require simplification
- Translate to an equation and solve
- Translate and solve applications

Skills

Introduced in this section:

- **EQN.1A** — One-step Equations (Add-Subtract)
- **WRD.EQ** — Decoding an explicit equation

Also practiced: WRD.NM (Naming the model).

Lesson

An equation is a balance: both sides always weigh the same. Whatever you do to one side — add to it, take away from it — you have to do to the other side too, or the balance tips. Solving an equation means peeling away everything that isn't the variable, one balanced move at a time, until the variable stands alone.

I do

Watch. Solve the equation. Show your work. $-(j + 2) + 2j - 1 = 5$

We do

Together. Solve each equation using the Subtraction and Addition Properties of Equality. $m - 12 = -12$

You do

Your turn. Find the weight of Tricia's daughter at her last checkup. The nurse reported that Tricia's daughter had gained 4.2 pounds since her last checkup and now weighs 31.6 pounds. How much did Tricia's daughter weigh at her last checkup?

Your turn. Translate to an equation and solve. The difference of n and $\frac{1}{6}$ is $\frac{1}{2}$.

Practice

1. Solve the equation. Show your work. $-6x - 11 + 7x - 5 = -16$

2. Solve each equation using the Subtraction and Addition Properties of Equality.
 $a - 30 = 57$

3. Solve each equation using the Subtraction and Addition Properties of Equality.
 $x - \frac{1}{3} = 2$

4. Solve the equation. Show your work. $c + 31 - 10 = 46$