

Warm-Up Notes

MAT 100: ELEMENTARY ALGEBRA

— Fall 2026 —

SECTION 1.9 PROPERTIES OF REAL NUMBERS

Install — 10 minute lesson

Objectives of this Section

- Use the commutative and associative properties
- Use the identity and inverse properties of addition and multiplication
- Use the properties of zero
- Simplify expressions using the distributive property

Skills**Introduced in this section:**

- **EXP.DI** — Distributive Property

Also practiced: FRC.SI (Simplifying Fractions), EXP.CL (Combining Like Terms), WRD.NM (Naming the model), NUM.MD (Multiplying-Dividing Integers), NUM.AS (Adding-Subtracting Integers).

Lesson

Multiplication can reach right into a set of parentheses and touch every term inside it — that's the distributive property. Instead of being stuck waiting to add first, you can multiply each piece separately and then add the results. This one move is what lets you simplify almost any expression that has parentheses in it.

I do

Watch. Simplify. $15 \cdot \frac{3}{5} (4d + 10)$

We do

Together. In your own words, state the commutative property of addition.

You do

Your turn. Use the distributive property to simplify the following expression. $8(4y + 9)$

Your turn. Simplify $8\left(x - \frac{1}{4}\right)$ using the distributive property and explain each step.

Practice

1. Use the distributive property to simplify the following expression. $9(5u + 8) + 2(u - 6)$

2. Use the distributive property to simplify the following expression. $-3(x - 6)$

3. Simplify. $\frac{0}{v-65.1}$, where $v \neq 65.1$

4. Simplify. $\frac{5}{6}a + \frac{3}{10}b + \frac{1}{6}a + \frac{9}{10}b$