Warm-Up Notes

MAT 100: Elementary Algebra

Fall 2026

Section 1.6 Add and Subtract Fractions

Install — 10 minute lesson

Objectives of this Section

- Add or subtract fractions with a common denominator
- Add or subtract fractions with different denominators
- Use the order of operations to simplify complex fractions
- Evaluate variable expressions with fractions

Skills

Introduced in this section:

No new skill introduced this section. **Also practiced:** FRC.SI (Simplifying Fractions), NUM.AS (Adding-Subtracting Integers), NUM.MD (Multiplying-Dividing Integers), NUM.FA (Factoring Integers), WRD.NM (Naming the model).

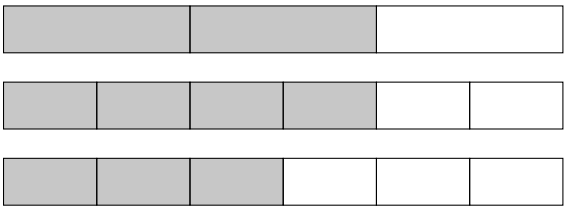
Lesson

Adding and subtracting fractions is different from multiplying them: the pieces have to be the same size before you can combine them. When the denominators already match, you just combine the numerators. When they don't, you rewrite each fraction as an equivalent fraction with a shared denominator first — then combine.

I do

Watch. Add the fractions with a common denominator. Show your work, using figures or algebra. $-\frac{8}{17}+\frac{15}{17}$

Watch. Now one where the denominators do *not* match: $\frac{2}{3}-\frac{1}{6}$. Strips first, then the arithmetic.



$\frac{2}{3}$

$\frac{4}{6}$ cut every third in half: same amount, sixths now

$\frac{3}{6} = \frac{1}{2}$ take one sixth away

The strips do not change how much you have — they change the *size of the pieces*, so that both fractions are counted in the same unit. Once every piece is a sixth, subtracting is just counting: four sixths take away one sixth is three sixths.

We do

Together. Add the fractions and simplify. $\frac{1}{2} + \frac{2}{3}$

You do

Your turn. Add the fractions and simplify. $1 - \frac{3}{10}$

Your turn. Use the order of operations to simplify. $1 - \frac{3}{5} \div \frac{1}{10}$

Practice

1. Add the fractions with a common denominator. Show your work, using figures or algebra.

$\frac{8}{q} + \frac{6}{q}$

2. Subtract the fractions. Show your work, using figures or algebra.

$$-\frac{3}{7}-\left(-\frac{5}{7}\right)$$

3. Simplify.

$$\frac{5}{9}-\frac{1}{6}$$

4. Add the fractions with a common denominator. Show your work, using figures or algebra.

$$-\frac{9}{19}+\frac{17}{19}$$