

Objectives:

- Students will memorize the multiplication table, as evidenced by them passing “minute quizzes.”
- Students will find equivalent fractions, as evidenced by them completing a warm-up worksheet where they do so.
- Students will add, subtract, multiply, and divide fractions, as evidenced by them completing a homework assignment where they do so.

Student Materials on Desk Corner:

- Homework #2-13
- Homework Checker
- Readiness Checker

Student Materials for Class:

- Homework Log
- Binder Paper
- Pencils

Teacher Materials:

- “Warm-up 2-14” for each student
- “Minute Quiz 2-14” for each student
- “Homework #2-13” answer key and grading roster for TA
- “Homework #2-14” handout for each student

Homework:

- Homework #2-14

Time	Activity
Before Bell	<p style="text-align: center;">DO NOW</p> <p>As students enter the classroom, shake hands and give them a copy of the warm-up. Remind students that there is a minute quiz, so students need to be seated quietly with a pencil when the bell rings.</p>
5 min	<p style="text-align: center;">MINUTE QUIZ, HOMEWORK COLLECTION, AND WARM-UP</p> <p>Minute Quiz When the bell rings, quickly go around and put the minute quiz on each student’s desk, facedown. Then, start everyone on the quiz at the same time and give everyone one minute. While students are working on the quiz, stamp the readiness checkers of students who were ready when the bell rang and had their readiness checkers out.</p> <p>Homework Collection Instruct the TA go around and collect homework and stamp homework checkers. Give the TA the answer key and have him or her grade the homework that was collected.</p> <p>Warm-up After the minute quiz, students should work on the warm-up while you take attendance.</p>
35 min	<p style="text-align: center;">LESSON: REVIEW OF FRACTION OPERATIONS</p> <p>Notes Follow the handwritten Cornell Notes.</p> <p>Homework Pass out the “Homework #2-14” handout and have students write down the assignment on their homework logs.</p>
40 min	<p style="text-align: center;">ALEKS</p> <p>Students should continue with ALEKS. Use this student work time to return graded homework.</p>

Solve the following multiplication problems. You have exactly one minute!

$7 \cdot 11 =$

$8 \cdot 3 =$

$8 \cdot 5 =$

$12 \cdot 2 =$

$4 \cdot 4 =$

$9 \cdot 9 =$

$11 \cdot 8 =$

$12 \cdot 5 =$

$2 \cdot 5 =$

$6 \cdot 5 =$

$1 \cdot 7 =$

$5 \cdot 7 =$

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$2 \cdot 5 =$

$6 \cdot 5 =$

$1 \cdot 7 =$

$5 \cdot 7 =$

Solve the following multiplication problems. You have exactly one minute!

$3 \cdot 3 =$

$11 \cdot 7 =$

$9 \cdot 5 =$

$2 \cdot 9 =$

$10 \cdot 7 =$

$7 \cdot 10 =$

$1 \cdot 10 =$

$4 \cdot 12 =$

$12 \cdot 10 =$

$6 \cdot 11 =$

$7 \cdot 10 =$

$12 \cdot 6 =$

Solve the following multiplication problems. You have exactly one minute!

$3 \cdot 3 =$

$11 \cdot 7 =$

$9 \cdot 5 =$

$2 \cdot 9 =$

$10 \cdot 7 =$

$7 \cdot 10 =$

$1 \cdot 10 =$

$4 \cdot 12 =$

$12 \cdot 10 =$

$6 \cdot 11 =$

$7 \cdot 10 =$

$12 \cdot 6 =$

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$3 \cdot 3 =$

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$9 \cdot 5 =$

$2 \cdot 9 =$

$10 \cdot 7 =$

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$1 \cdot 10 =$

$4 \cdot 12 =$

$12 \cdot 10 =$

$6 \cdot 11 =$

$7 \cdot 10 =$

$12 \cdot 6 =$

Solve the following multiplication problems. You have exactly one minute!

$6 \cdot 9 =$

$11 \cdot 10 =$

$8 \cdot 4 =$

$8 \cdot 1 =$

$5 \cdot 8 =$

$2 \cdot 10 =$

$10 \cdot 7 =$

$8 \cdot 11 =$

$5 \cdot 1 =$

$6 \cdot 8 =$

$6 \cdot 11 =$

$11 \cdot 7 =$

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$5 \cdot 8 =$

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$6 \cdot 8 =$

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$11 \cdot 7 =$

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$11 \cdot 10 =$

$8 \cdot 4 =$

$8 \cdot 1 =$

$5 \cdot 8 =$

$2 \cdot 10 =$

$10 \cdot 7 =$

$8 \cdot 11 =$

$5 \cdot 1 =$

$6 \cdot 8 =$

$6 \cdot 11 =$

$11 \cdot 7 =$

Fill in the blanks so that the following fractions are equivalent.

1) $\frac{3}{5} = \frac{[\]}{20}$

2) $\frac{[\]}{5} = \frac{48}{40}$

3) $\frac{6}{8} = \frac{[\]}{4}$

4) $\frac{2}{[\]} = \frac{6}{21}$

5) $\frac{11}{6} = \frac{44}{[\]}$

6) $\frac{4}{7} = \frac{28}{[\]}$

7) $\frac{[\]}{12} = \frac{33}{36}$

8) $\frac{10}{[\]} = \frac{50}{35}$

9) $\frac{42}{[\]} = \frac{84}{100}$

10) $\frac{17}{20} = \frac{[\]}{100}$

11) $\frac{12}{18} = \frac{[\]}{3}$

12) $\frac{7}{3} = \frac{[\]}{24}$

Fill in the blanks so that the following fractions are equivalent.

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2) $\frac{[\]}{5} = \frac{48}{40}$

3) $\frac{6}{8} = \frac{[\]}{4}$

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9) $\frac{42}{[\]} = \frac{84}{100}$

10) $\frac{17}{20} = \frac{[\]}{100}$

11) $\frac{12}{18} = \frac{[\]}{3}$

12) $\frac{7}{3} = \frac{[\]}{24}$

Chapter 1

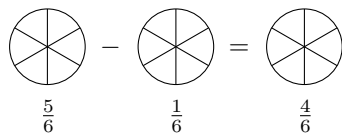
Review of Fraction Operations

1.1 Adding and Subtracting Fractions

Recall: to add or subtract fractions with common denominators, we add or subtract their numerators (how many slices we have). Then, we simplify.

Example 1. Evaluate $\frac{5}{6} - \frac{1}{6}$.

First, draw what's going on:



So,

$$\frac{5}{6} - \frac{1}{6} = \frac{5-1}{6} = \frac{4}{6}$$

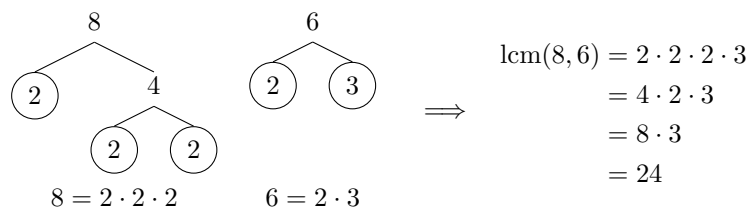
Now, simplify:

$4 = 2 \cdot 2$ $6 = 2 \cdot 3$ $\Rightarrow \frac{4}{6} = \frac{2 \cdot 2}{2 \cdot 3} = \frac{2}{3}$

Recall: to add or subtract fractions with differing denominators, we find equivalent fractions with common denominators and then add or subtract them. Then, we simplify.

Example 2. Evaluate $\frac{4}{8} + \frac{1}{6}$.

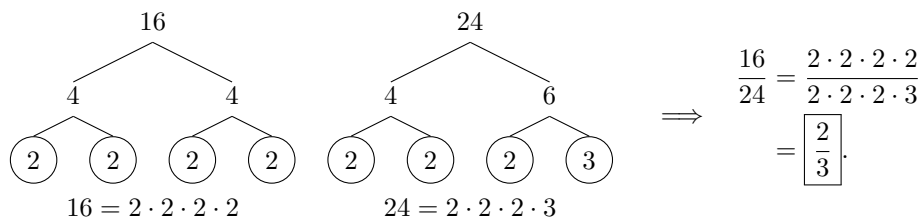
First, find $\text{lcm}(8, 6)$.



Then, find equivalent fractions and add.

$$\left. \begin{array}{l} \frac{4}{8} = \frac{4 \cdot 3}{8 \cdot 3} = \frac{12}{24} \\ \frac{1}{6} = \frac{1 \cdot 4}{6 \cdot 4} = \frac{4}{24} \end{array} \right\} \frac{12}{24} + \frac{4}{24} = \frac{12 + 4}{24} = \frac{16}{24}.$$

Now, simplify:



1.2 Multiplying Fractions

Recall: to multiply two fractions, we write the product of the numerators over the product of the denominators, then simplify.

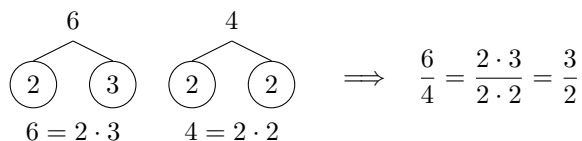
Example 3. Evaluate $2 \cdot \frac{3}{4}$.

First, turn 2 into an improper fraction: $2 = \frac{2}{1}$.

Then,

$$2 \cdot \frac{3}{4} = \frac{2}{1} \cdot \frac{3}{4} = \frac{2 \cdot 3}{1 \cdot 4} = \frac{6}{4}$$

Now, simplify:



$$\begin{array}{l} \frac{1}{2} \overline{)3} \\ \underline{2} \\ 1 \\ \underline{2} \\ 1 \end{array} \Rightarrow \frac{3}{2} = \boxed{1\frac{1}{2}}$$

1.3 Dividing Fractions

Recall: To divide two fractions, we find the reciprocal of the second fraction, then multiply and simplify.

Example 4. Evaluate $2\frac{1}{3} \div \frac{7}{6}$.

First, turn $2\frac{1}{3}$ into an improper fraction:

$$2\frac{1}{3} = \frac{2 \cdot 3 + 1}{3} = \frac{6 + 1}{3} = \frac{7}{3}.$$

Then, find the reciprocal of the second fraction and multiply:

$$\frac{7}{3} \div \frac{7}{6} = \frac{7}{3} \cdot \frac{6}{7} = \frac{7 \cdot 6}{3 \cdot 7} = \frac{42}{21}$$

reciprocal

Now, simplify:

$$\begin{array}{c}
 42 \\
 \swarrow \quad \searrow \\
 6 \qquad \quad (7) \\
 \swarrow \quad \searrow \\
 (2) \quad (3) \\
 42 = 2 \cdot 3 \cdot 7
 \end{array}
 \quad
 \begin{array}{c}
 21 \\
 \swarrow \quad \searrow \\
 (3) \quad (7) \\
 21 = 3 \cdot 7
 \end{array}
 \implies
 \frac{42}{21} = \frac{2 \cdot 3 \cdot 7}{3 \cdot 7} = \boxed{2}$$

Evaluate the following fraction problems. For examples, see your notes.

1) $\frac{1}{3} + \frac{1}{6}$

2) $\frac{1}{4} \cdot 1\frac{3}{5}$

3) $\frac{3}{4} \div \frac{1}{2}$

4) $3\frac{1}{5} - 2\frac{3}{5}$

5) $2 \cdot \frac{3}{8}$

6) $\frac{4}{5} + \frac{2}{3}$

$$7) \frac{3}{8} \div 1\frac{1}{5}$$

$$8) 2 - \frac{1}{2}$$

$$9) \frac{2}{4} + 1\frac{1}{2}$$

$$10) 4\frac{1}{5} \cdot 1\frac{3}{7}$$

$$11) \frac{3}{12} - \frac{1}{8}$$

$$12) 1\frac{1}{2} \div 2\frac{1}{4}$$