4

Microlearning Module

QUARTER 3 – Module 10

Adding and Subtracting Dissimilar Fraction:

a. Two proper fractions
b. Two mixed fractions
c. A mixed number and a proper fraction
d. A whole number and a proper fraction
e. A whole number and a mixed number

Microlearning Module

REGION XII - DIVISION OF SULTAN KUDARAT

Math 4
Microlearning Module (MLM)
Quarter 3 – Module 10: Adding and Subtracting Dissimilar Fractions
First Edition, 2024

Published by the Department of Education- RO XII, Division of Sultan Kudarat

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Printed in the Philippines by

Department of Education – Region XII, Division of Sultan Kudarat

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MICROLEARNING MODULE

Name: _____Grade & Sec: _____ Score: _____

Subject: _____Quarter: 3 MLM No. 10

Teacher: _____

Competency: Add and subtract dissimilar fractions:

A. Two proper fractions
B. two mixed fractions
C. a mixed number and a proper fraction
D. a whole number and a proper fraction
E. a whole number and a mixed number

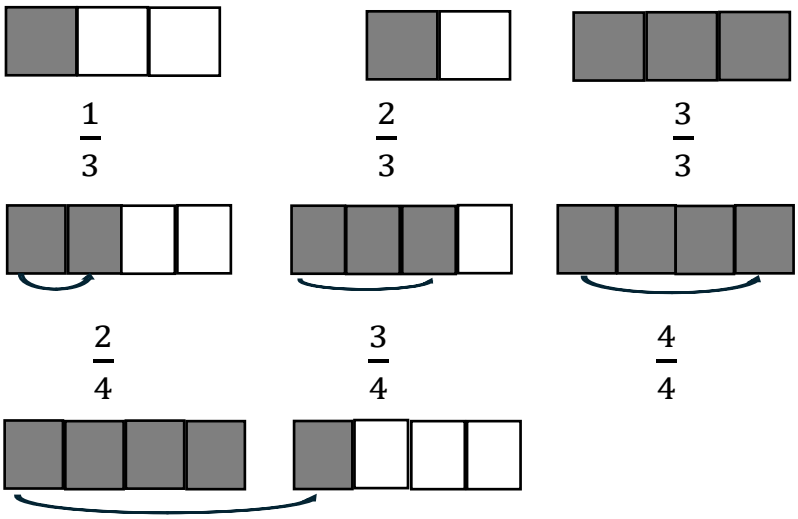
A. Look Back!

Read and analyze the problem. Use steps in solving addition and subtraction of dissimilar fractions.

Mang Joaquin painted the fence for 2 hours, the windowpanes for $\frac{1}{2}$ hour and the door for $\frac{1}{4}$ hour. How many hours did Mang Joaquin spend painting the door? How many more hours did Mang Joaquin spend painting windowpanes compared to the door?

B. What's New?

Observe the illustrations below.



C. What Is It?

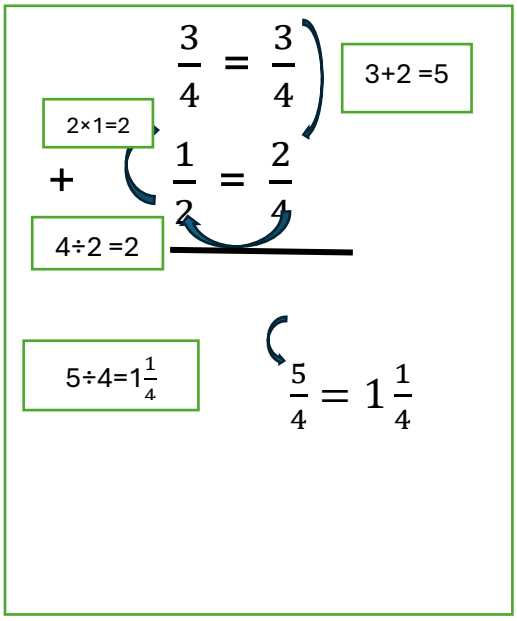
Adding and Subtracting Dissimilar Fractions

Example 1. Two proper fractions

Lisa bought $\frac{3}{4}$ kilogram of lanzones and $\frac{1}{2}$ kilogram of apples.

1. How many kilograms of fruit did she buy in total?
2. How many more kilograms of lanzones than apples did she buy?

The number sentence is $\frac{3}{4} + \frac{1}{2}$



1. To answer the first question, add $\frac{3}{4}$ and $\frac{1}{2}$.
2. Change $\frac{3}{4}$ *and* $\frac{1}{2}$ to similar fractions by finding the LCD or Least Common denominators of 2 and 4.
3. Adjust each fraction to have the common denominator. Since 3/4 already has the denominator 4, there is no need to convert it; you can simply keep it as is. Meanwhile, convert ½ to a fraction with a denominator of 4:
4. Add the numerators of the fractions while keeping the denominator the same.
5. Write the sum over the least common denominator.
6. Write the answer as a mixed number if it is an improper fraction.

Answer: Liza bought $1\frac{1}{4}$ kilograms of fruits in all.

The number sentence is $\frac{3}{4} - \frac{1}{2}$

$$\begin{array}{rl} & \frac{3}{4} = \frac{3}{4} \\ - & \frac{1}{2} = \frac{2}{4} \\ \hline & \frac{1}{4} \end{array}$$

1. To find the answer to the second question in the problem, subtract $\frac{1}{2}$ from $\frac{3}{4}$.
2. Change $\frac{3}{4}$ and $\frac{1}{2}$ to similar fractions by first finding the LCD of 2 and 4.
3. Subtract the numerators and write the difference over the least common denominator.

Answer: Liza bought $\frac{1}{4}$ kilogram more of lanzones than apples.

Example 2. Two mixed fractions

Add: $2\frac{1}{2} + 1\frac{1}{5}$

$$\begin{array}{rl} & 2\frac{1}{2} = 2\frac{5}{10} \\ + & 1\frac{1}{5} = 1\frac{2}{10} \\ \hline & 3\frac{7}{10} \end{array}$$

Subtract: $2\frac{1}{2} - 1\frac{1}{5}$

$$\begin{array}{rl} & 2\frac{1}{2} = 2\frac{5}{10} \\ - & 1\frac{1}{5} = 1\frac{2}{10} \\ \hline & 1\frac{3}{10} \end{array}$$

To add or subtract mixed fraction, follow these steps:

- Align the whole number first, then add or subtract them.
- Change dissimilar fraction to similar fraction using the LCD.
- Add or subtract the numerator and copy the common denominator.
- Simplify the fraction to its lowest term if needed.

Example 3: A mixed number and a proper fraction.

Add. $3\frac{2}{5} + \frac{1}{4}$

$$3\frac{2}{5} = 3\frac{8}{20}$$
$$+ \quad \frac{1}{4} = \frac{5}{20}$$
$$3\frac{13}{20}$$

Subtract: $3\frac{2}{5} - \frac{1}{4}$

$$3\frac{2}{5} = 3\frac{8}{20}$$
$$- \quad \frac{1}{4} = \frac{5}{20}$$
$$3\frac{3}{20}$$

Steps for Subtracting a Mixed Number and a Proper Fraction:

1. Change dissimilar fraction to similar fraction using LCD.
2. Add or subtract the numerator and copy the denominator.
3. Copy the whole number.
4. Reduce the lowest term if necessary.

Example 4: A whole number and a proper fraction.

Add: $6 + \frac{3}{5}$

$$6 = 5\frac{5}{5}$$
$$+ \quad \frac{3}{5} = \frac{3}{5}$$
$$5\frac{8}{5} \text{ or } 6\frac{3}{5}$$

Note: To change improper fraction to proper fraction, just divide the numerator by the denominator.

Subtract: $6 - \frac{3}{5}$

$$6 = 5\frac{5}{5}$$

Steps for Adding and Subtracting Whole Numbers and Proper Fractions:

1. Change the whole number to a mixed fraction. (Copy the denominator of the addends ($\frac{3}{5}$) or the subtrahend and make it as numerator and denominator to make it 1).
2. Aligned the addends/subtrahends.
3. Add or subtract the numerator and copy the common denominator.
4. Reduce to lowest term if needed.

$$\begin{array}{rcl} - \frac{3}{5} & = & \frac{3}{5} \\ \hline & & 5\ \frac{2}{5} \end{array}$$

Example 5. A whole number and a mixed fraction.

Addition:

$5 + 4\ \frac{3}{7} = 9\ \frac{3}{7}$

Subtraction: $5 - 4\ \frac{3}{7}$

$$\begin{array}{rcl} 5 & = & 4\ \frac{7}{7} \\ - 4\ \frac{3}{7} & = & 4\ \frac{3}{7} \\ \hline \circ & & \frac{4}{7} \end{array}$$

To add or subtract a whole number and a mixed fraction, follow these steps:

Addition:

1. When adding a whole number to a mixed fraction, simply add the whole number to the whole number part of the mixed fraction and keep the fractional part unchanged.

Subtraction:

1. Change the whole number to a mixed fraction.
2. Subtract the whole number.
3. Subtract the numerators and copy the denominator.
4. Reduce the difference to the lowest term, if needed.

D. Let's Try!

A. Perform the given operations.

1. $\begin{array}{r} \frac{2}{4} \\ + \frac{3}{5} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{3}{8} \\ + \frac{2}{6} \\ \hline \end{array}$

3. $\begin{array}{r} 3\ \frac{2}{4} \\ + \quad \frac{1}{5} \\ \hline \end{array}$

4. $\begin{array}{r} \frac{1}{5} \\ + 5\ \frac{1}{6} \\ \hline \end{array}$

5. $\begin{array}{r} 6\ \frac{2}{4} \\ - 4\ \frac{1}{3} \\ \hline \end{array}$

6. $\begin{array}{r} 5 \\ - \quad \frac{1}{3} \\ \hline \end{array}$

B. Analyze carefully, and solve the given problem.

1. Emily walked $2\frac{2}{3}$ kilometers in the morning and $1\frac{3}{4}$ of kilometers in the afternoon. What was the total distance she walked that day? How many more kilometers did she walk in the morning than in the afternoon?

E. Let's Evaluate

A. Perform the indicated operation.

1.	2.	3.	4.	5.
$\frac{3}{4}$	6	$2\frac{2}{8}$	$3\frac{5}{8}$	20
$+\ \frac{5}{8}$	$-\ \frac{2}{4}$	$+\ 3\frac{2}{6}$	$-\ \frac{2}{6}$	$+\ 10\frac{7}{15}$
_____	_____	_____	_____	_____

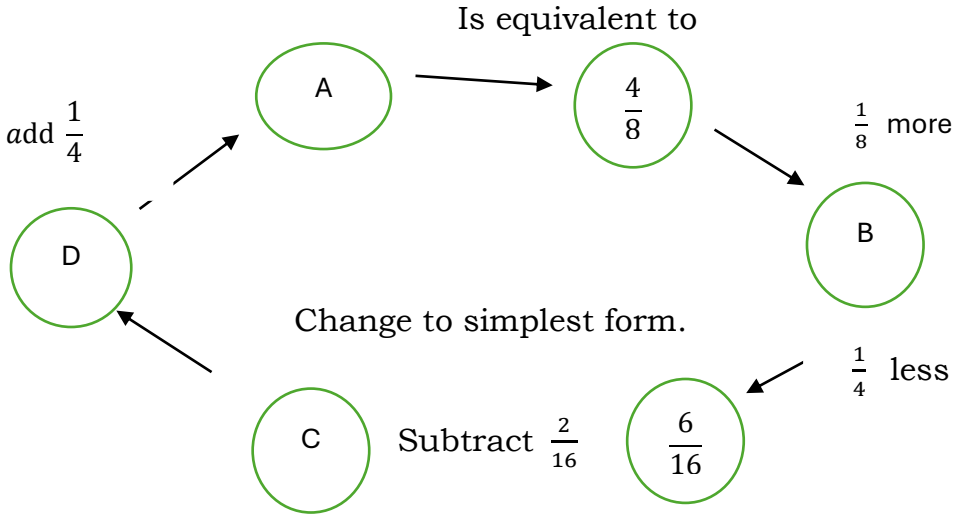
B. Analyze and solve the given problems.

1. In one year, Grade 4 used $8\frac{2}{6}$ boxes of pencils, while Grade 5 used $10\frac{3}{5}$ boxes of pencils. How many boxes did they use in total? How many more boxes of pencils did grade 5 use compared to grade 4?

2. Ana's Bakeshop sold $5\frac{3}{4}$ loaves of bread in 1 week and $5\frac{6}{8}$ loaves of bread in two weeks. How many loaves of bread did Ana's Bakeshop sell in total?

Challenge!

Follow the arrows to get the answer. Write your answer on a separate sheet of paper.



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DISCLAIMER

This Microlearning Module has been developed by DepEd - Division of Sultan Kudarat for educational purposes only. It is designed to supplement classroom instruction and should not be used as the sole source of information. Teachers are encouraged to exercise their professional discretion and tailor the content to suit their students' individual needs.

REGION XII - DIVISION OF SULTAN KUDARAT

Answer Keys: Math 4 Quarter 3 NC 10

Look Back

1. Mang Joaquin spent $2\frac{3}{4}$ hours in painting.
2. Mang Joaquin spent $\frac{1}{4}$ more hours in painting the windowpanes compared to the door.

Let's Try

Add and subtract

1. $1\frac{1}{10}$
2. $\frac{1}{24}$
3. $3\frac{7}{10}$
4. $5\frac{1}{30}$
5. $2\frac{1}{6}$
6. $5\frac{2}{3}$

Let's Try

Problem Solving

1. $4\frac{5}{12}$ Emily walked that day.
2. $1\frac{2}{3}$ more Emily walked in the morning than in the afternoon.

Let's Evaluate:

Add and subtract:

1. $1\frac{3}{8}$
2. $5\frac{1}{2}$
3. $5\frac{7}{12}$
4. $3\frac{7}{24}$
5. $30\frac{7}{15}$

Problem Solving

1. $18\frac{14}{15}$ boxes of pencils used in all.
   $2\frac{4}{15}$ boxes of pencils used by grade 4 more than grade 5
2. $11\frac{1}{2}$ loaves of breads consumed in school.
   $3\frac{1}{2}$ Loaves of bread left.

$\frac{1}{4}$ hours

Challenge!

A. $\frac{2}{4}$
B. $\frac{5}{8}$
C. $\frac{4}{16}$
D. $\frac{1}{4}$