4

DepED
DEPARTMENT OF EDUCATION

Mathematics
Quarter 2 – Module 6: Addition and Subtraction of Dissimilar Fractions

ALTERNATIVE DELIVERY MODE
ADM

Mathematics – Grade 4
Alternative Delivery Mode
Quarter 2 – Module 6: Addition and Subtraction of Dissimilar Fractions
First Edition, 2020

Published by the Department of Education
Secretary: Leonor Magtolis Briones
Undersecretary: Diosdado M. San Antonio

Development Team of the Module

Writer: Criselda Natalicio Lagamayo

Editors: Elena D. Hubilla, Josephine D. Recebido, Sonia F. Aninipot

Reviewers: Marjorie Ann F. Deramas, Antonio M. Herrera, Eric A. Aninipot

Illustrator: Jason C. Borabo

Layout Artist: Teresa Vissia B. Suñga

Management Team: Regional Director: Gilbert T. Sadsad
CLMD Chief: Francisco B. Bulalacao Jr.
Regional EPS In Charge of LRMS: Grace U. Rabelas
Regional EPS In Charge of Math: Loyd H. Botor
Regional ADM Coordinator: Ma Leilani R. Lorico
CID Chief : Monserat D. Guemo
Division EPS In Charge of LRMS: Florena M. Deuna

Printed in the Philippines by _____

Department of Education – Region V

Office Address: Regional Center Site, Rawis, Legazpi City, 4500

Contact: 0917-178-1288

E-mail Address: region5@deped.gov.ph

4

Mathematics
Quarter 2 – Module 6: Addition and Subtraction of Dissimilar Fractions

DepED
DEPARTMENT OF EDUCATION

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text. Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.

What I Need to Know

You learned in the previous lesson how to add or subtract similar fractions. In this module, what you will be adding or subtracting are dissimilar fractions (fractions with different denominators).

The activities will allow you to explore various ways of adding or subtracting dissimilar fractions.

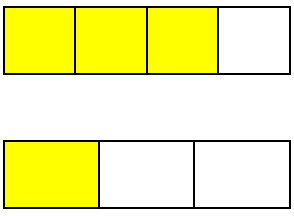
At the end of the lesson, you should be able to:

1. visualize addition and subtraction of dissimilar fractions;
2. add dissimilar fractions; and
3. subtract dissimilar fractions.

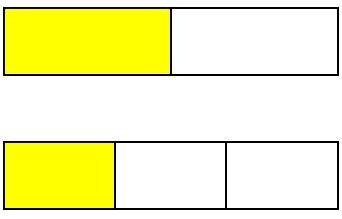
Lesson 1: Addition of Dissimilar Fractions

What I Know

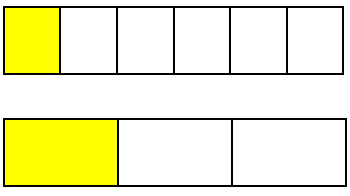
A. Write the correct number sentence for each illustration below.

1. 

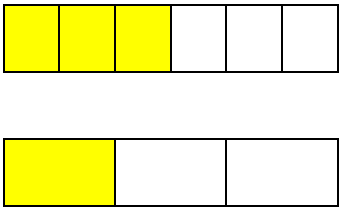
_____ + _____ = _____

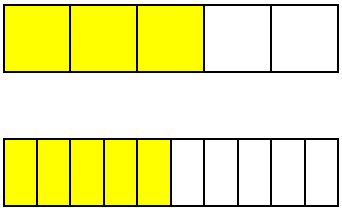
2. 

_____ - _____ = _____

3. 

_____ + _____ = _____

4.  _____ - _____ = _____

5.  _____ + _____ = _____

B. Perform the following operations. Write your answer in the box.

6. $\frac{5}{8} + \frac{2}{3} =$ ☐

7. $\frac{1}{4} + \frac{1}{2} =$ ☐

8. $\frac{3}{4} - \frac{1}{5} =$ ☐

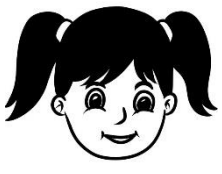
9. $\frac{2}{3} + \frac{1}{5} =$ ☐

10. $\frac{8}{10} - \frac{1}{2} =$ ☐

Are you done answering?

If yes, time to check. Please go to page 30 for the ***Answer Key***.

What's In



How can we make dissimilar fractions become similar? What steps are we going to observe?

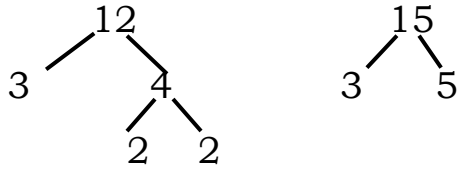
Let's review on how to get the least common multiple.
Get the prime factorization of two numbers, say 12 and 15.

Here's how you do it.

- By Listing Method

Write the multiples of 12: 12, 24, 36, 48, 60, 72, 84...
Write the multiples of 15: 15, 30, 45, 60, 75, 90 ...

Or we get the prime factors using the factor tree.



1. List the prime factors and take the common prime factors of the two numbers as one.

12 = 3 x 2 x 2
15 = 3 x 5

2. Multiply the factors.

12 = 3 x 2 x 2
15 = 3 x 5

LCM of 12 and 15= 3 x 5 x 2 x 2 = 60

Can you work on the next exercises on your own?

Find the LCM of the following numbers.

1. 6 =
   9 =
   LCM =

2. 3 =
   5 =
   LCM =

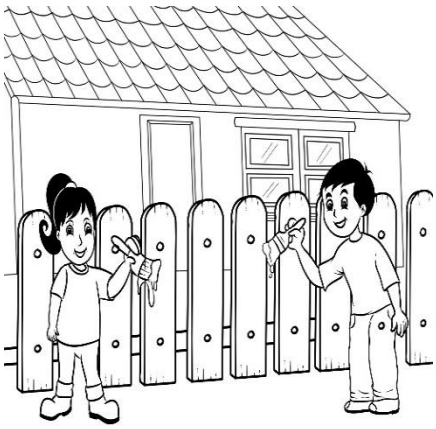
3. 4 =
   10 =
   LCM =

To check, go to page 30 for the *Answer Key*. If you got a score of 2 - 3, VERY GOOD! You are now ready for this module. If you got 1 or below, take time to review past lessons on LCM.

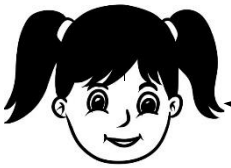
What's New

Adding Dissimilar Fractions

Can you add dissimilar fractions right away?
What do you need to do to make dissimilar fractions easy to add or subtract?



LJ and Therese help their father fix things in their house. They volunteer to paint their fence. After one hour, LJ has painted $\frac{2}{4}$ of the fence while Therese has painted $\frac{3}{8}$ of the fence. What part of the whole fence were they able to paint after an hour?



What kind of fraction was given in the problem? What strategy do we use to find the answer to this problem?

What is It

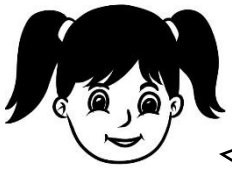
Let us use blocks to understand the problem.

$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

Therese painted this much

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

LJ painted this much



We need to know what part of the whole fence LJ and Therese were able to paint after an hour. We need to add the fractions.

$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

We can see that $\frac{1}{4}$ has the same length as $\frac{2}{8}$. We can say that $\frac{2}{4}$ is equal to $\frac{4}{8}$.

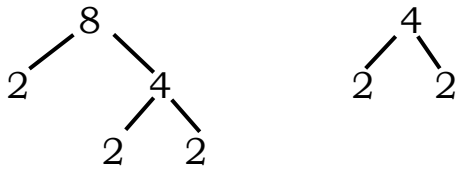
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

We draw a single block to put the two fractions together and label them. We can see that the shaded blocks represent $\frac{7}{8}$ of the whole fence.

LJ and Therese were able to paint $\frac{7}{8}$ of the fence.

- We can also solve this problem by adding the fractions.
  - We know that when the denominators are the same (similar fractions), we can simply add the numerators and copy the denominator. Since the given fractions are not similar, we should change them first to similar fractions.

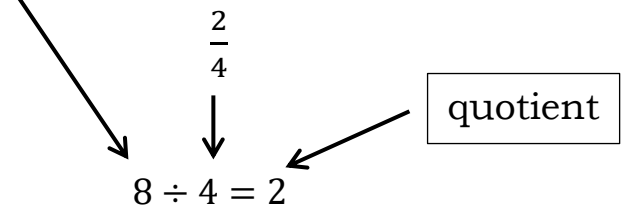
    Step 1: We get the Least Common Denominator (LCD) or the Least Common Multiple (LCM) of the denominators. We can make use of factor tree or continuous division.

Factor Tree	Continuous Division
 8 = 2 X 2 X 2 4 = 2 X 2 LCD = 2 x 2 x 2 = 8	2 | 8, 4 2 | 4, 2 2 | 2, 1 1 1 LCD = 2 x 2 x 2 x 1 x 1 = 8

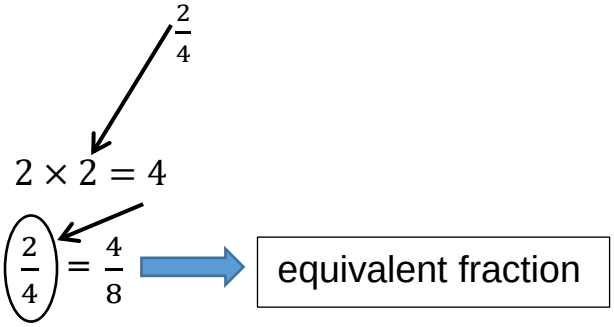
Step 2: Solve for the equivalent fractions with the LCD being the denominator of the new fractions. Here's how you will do it.

- Divide the LCD by the denominator of the first fraction.

LCD: 8

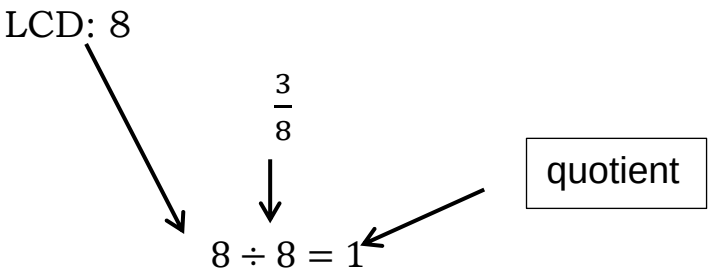


- Multiply the quotient by the numerator of the first fraction. The resulting product becomes the numerator of the equivalent fraction while the LCD becomes the denominator.

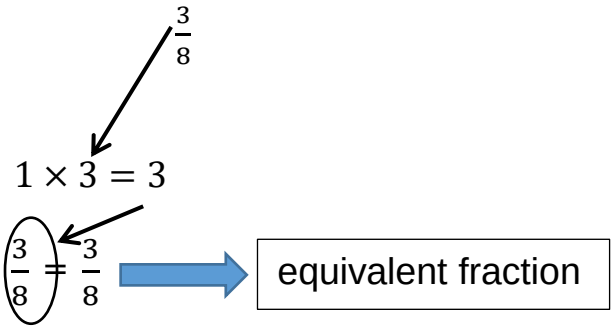


- Do the same steps for the other given fraction.

  - Divide the LCD by the denominator of the second fraction.



  - Multiply the quotient by the numerator of the second fraction. The resulting product becomes the numerator of the equivalent fraction while the LCD becomes the denominator



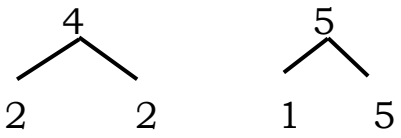
Step 3: Add the equivalent fractions like adding similar fractions.

$$\begin{array}{r} \frac{4}{8} \\ +\ \frac{3}{8} \\ \hline \mathbf{\frac{7}{8}} \end{array}$$

In adding dissimilar fractions, we have to change them first to similar fractions by finding the Least Common Denominator (LCD) of the fractions and then finding for its equivalent fraction.

Let's have another example: $\frac{1}{4} + \frac{3}{5}$

- Find the LCD:

Factor Tree	Continuous Division
 4 = 2 X 2 5 = 1 x 5 LCD = 2 x 2 x 1 x 5 = 20	2 | 4, 5 2 | 2, 5 5 | 1 5 1 1 LCD = 2 x 2 x 5 x 1 x 1 = 20

- Find for the equivalent fractions.

$$\frac{1}{4} = \frac{5}{20}$$
$$+ \quad \frac{3}{5} = \frac{12}{20}$$

- Perform the indicated operation.

$$\frac{5}{20}$$
$$+ \quad \frac{12}{20}$$
$$\frac{\mathbf{17}}{\mathbf{20}}$$

Don't forget to reduce your answer to lowest term if needed.

What's More

A. Add the fractions. Give your answer in simplest form.

1. $\frac{2}{5} + \frac{2}{10} = \square$

2. $\frac{3}{6} + \frac{5}{12} = \square$

3. $\frac{7}{15} + \frac{2}{5} = \square$

B. Add the following dissimilar fractions. Circle the correct answer.

4. $\frac{2}{3} + \frac{3}{5} =$ $1\frac{4}{15}$ $1\frac{2}{15}$ $1\frac{3}{15}$

5. $\frac{1}{4} + \frac{2}{6} =$ $\frac{7}{12}$ $\frac{4}{12}$ $\frac{1}{12}$

To check, go to page 30 for the *Answer Key*. If you got a score of 4 - 5, VERY GOOD! You can proceed to the next activity. If you got 3 or below, take time to review the discussion in the previous pages.

What I Have Learned

How do you add dissimilar fractions?

To add dissimilar fractions:

a. Find first the least common denominator (LCD) or the Least Common Multiple (LCM) of the denominators given.
b. Change the fractions into similar fractions or find for the equivalent fractions.
c. Add.
d. Reduce the answer to lowest term if needed

What I Can Do

A. Add the following fractions by changing first dissimilar fractions to similar. Reduce your answer to lowest term.

1. $\frac{2}{8} = \frac{\quad}{8}$

$+$

$\frac{3}{4} = \frac{\quad}{8}$

2. $\frac{1}{2} = \frac{\quad}{6}$

$+$

$\frac{2}{6} = \frac{\quad}{6}$

3. $\frac{1}{2} = \frac{\quad}{4}$

$+$

$\frac{3}{4} = \frac{\quad}{4}$

4. $\frac{5}{10} = \frac{\quad}{10}$

$+$

$\frac{2}{5} = \frac{\quad}{10}$

5. $\frac{1}{2} = \frac{\quad}{6}$

$+$

$\frac{2}{3} = \frac{\quad}{6}$

To check, go to page 30 for the *Answer Key*. If you got a score of 4 - 5, VERY GOOD! You can proceed to the next activity. If you got 3 or below, take time to review the discussion in the previous pages.

Assessment

Add the following dissimilar fractions. Write your answer in simplest form.

1. $\frac{3}{7} = \_$ + $\frac{2}{4} = \_$ _____

2. $\frac{1}{2} = \_$ + $\frac{3}{8} = \_$ _____

3. $\frac{3}{4} = \_$ + $\frac{1}{3} = \_$ _____

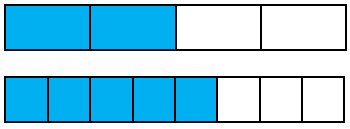
4. $\frac{3}{5} + \frac{1}{3} =$

5. $\frac{5}{6} + \frac{3}{4} =$

6. $\frac{7}{8} + \frac{3}{5} =$

Write the correct number sentence for each of the following figure.

7.

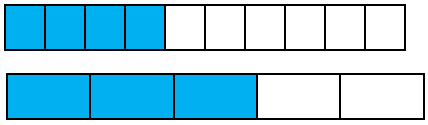


_____ + _____ = _____

8.

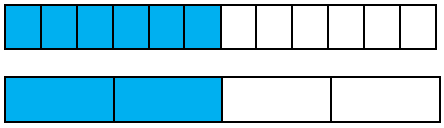
_____ + _____= _____

9.



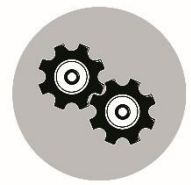
_____ + _____= _____

10.



_____ + _____= _____

To check, go to page 30 for the *Answer Key*. If you got a score of 8 - 10, VERY GOOD! You can proceed to the next activity. If you got 7 or below, take time to review the discussion in the previous pages.



Additional Activities

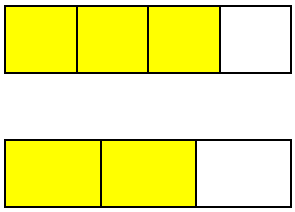
Practice adding dissimilar fractions. Write three pairs of dissimilar fractions to add. Use paper strips or colored blocks to represent your fractions and add them. Paste them on the space below. Express your answers in lowest term.

Congratulations for reaching this part of the module. You can always review the previous pages of this module if you need to.

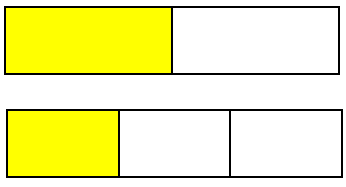
Lesson 2: Subtraction of Dissimilar Fractions

What I Know

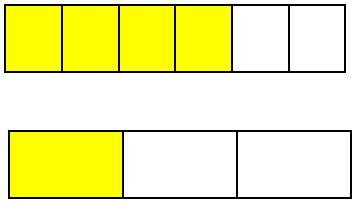
A. Write the correct number sentence for each illustration below.

1. 

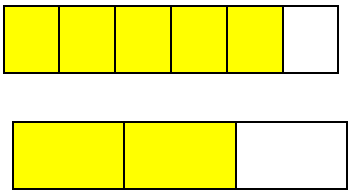
_____ - _____ = _____

2. 

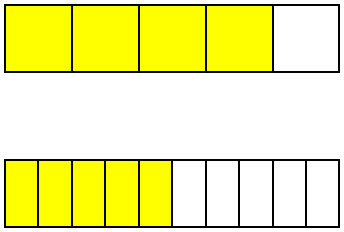
_____ + _____ = _____

3. 

_____ - _____ = _____

4. 

_____ + _____ = _____

5. 

_____ + _____ = _____

B. Subtract the following fractions. Write your answer in the box.

6. $\frac{6}{8} - \frac{2}{3} =$ ☐

7. $\frac{2}{4} - \frac{1}{5} =$ ☐

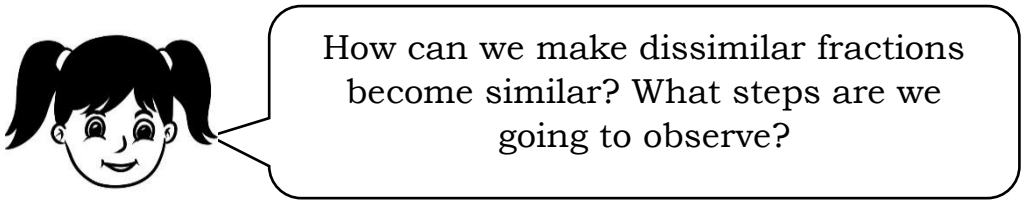
8. $\frac{5}{9} - \frac{1}{3} =$ ☐

9. $\frac{2}{3} - \frac{1}{5} =$ ☐

10. $\frac{8}{10} - \frac{2}{5} =$ ☐

What's In

Subtracting dissimilar fractions is quite different from subtracting similar fractions. When we subtract fractions, we have to see first if their denominators are the same. If they are not, we have to make these fractions similar first before we subtract them.



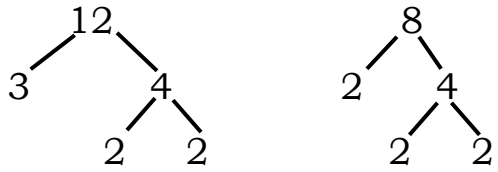
Let's review on how to get the least common multiple.
Get the prime factorization of two numbers, say 8 and 12.

Here's how you do it.

- By Listing Method

  Write the multiples of 8: 8, 16, 24, 32, 40, 48, 56…
  Write the multiples of 12: 12, 24, 36, 48, 60, 72, 84…

Or we can get the prime factors using the factor tree.

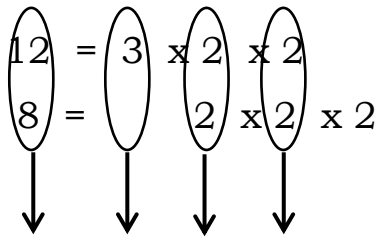


1. List the prime factors and take the common prime factors of the two numbers as one.

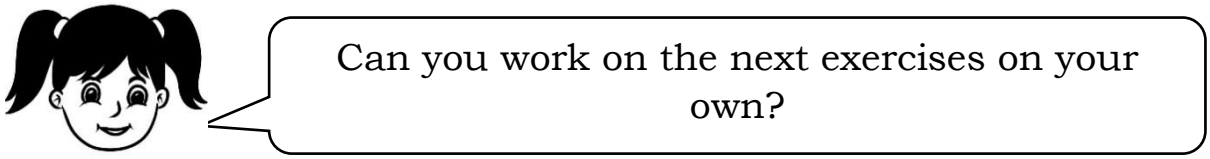
$12 = 3 \times 2 \times 2$

$8 = 2 \times 2 \times 2$

2. Multiply the factors.



LCM of 12 and 8 = 3 x 2 x 2 x 2 = 24



Find the LCM of the following pairs of numbers.

1. 4 and 8

   LCM =

2. 6 and 24

   LCM =

3. 3 and 5

   LCM =

To check, go to page 31 for the *Answer Key*. If you got a score of 2 - 3, VERY GOOD! You are now ready for this module. If you got 1 or below, take time to review past lessons.

What's New

Subtracting Dissimilar Fractions

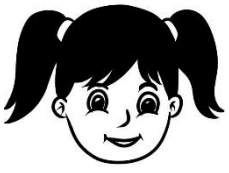
Can you subtract dissimilar fractions right away?

What do you need to do to make dissimilar fractions easy to subtract? Consider the problem below.

Grade 4 Sincerity has 36 students. A survey was made to identify how many of these students are members of the Sports Club and of the Academic Club.

The results of the survey showed that $\frac{4}{9}$ of the students in the class belong to a sports club and $\frac{1}{3}$ of the class belong to an academic club.

How many more students are in the sports club than in the academic club?



Can we use the same strategy we used in subtracting similar fractions?

What is It

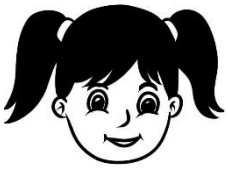
Let us use blocks to understand the problem.

$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$

This part of the class belongs to a sports club

$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

This part of the class belongs to an academic club



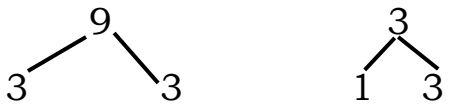
We need to align the blocks to solve the problem. In this case, we see that the sports club has $\frac{1}{9}$ more members than the academics club.

$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$		
$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$

- We can also solve this problem by subtracting the fractions.
  - We can subtract the numerators and just copy the denominator if the fractions are similar. Since the fractions in the given problem are not similar, we should

change them first to similar fractions.

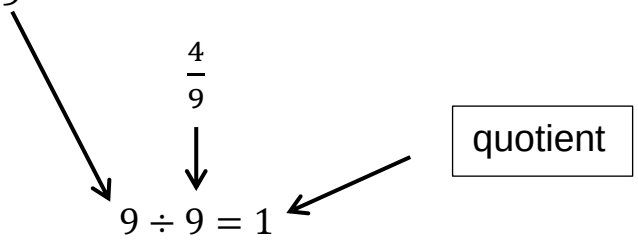
Step 1: We get the Least Common Denominator (LCD) or the Least Common Multiple (LCM) of the denominators. We can make use of factor tree or continuous division.

Factor Tree	Continuous Division
 9 = 3 x 3 3 = 1 x 3 LCD = 3 x 3 = 9	3 | 9, 3 3 | 3, 1 | 1 LCD = 3 x 3 = 9

Step 2: Solve for the equivalent fractions with the LCD being the denominator of the new fractions. Here's how you will do it.

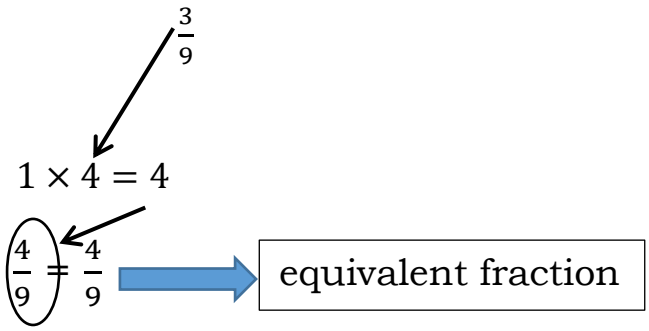
- Divide the LCD by the denominator of the first fraction.

  LCD: 9



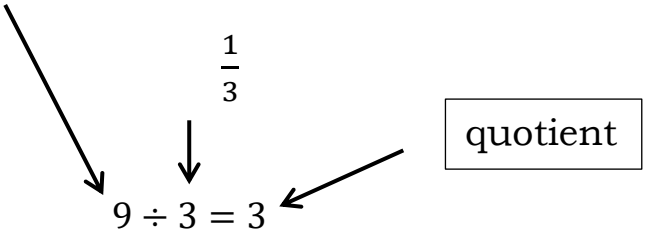
- Multiply the quotient by the numerator of the first fraction. The resulting product becomes the numerator of the equivalent fraction while

the LCD becomes the denominator.

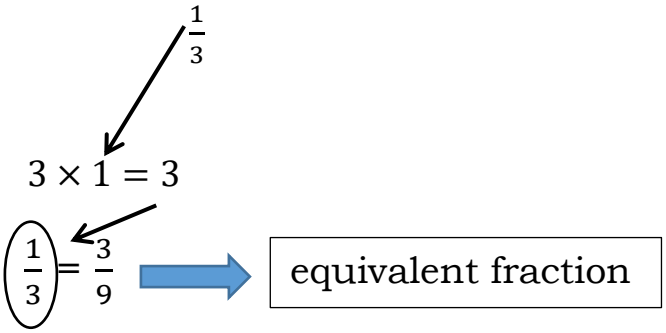


- Do the same steps for the other given fraction.
  - Divide the LCD by the denominator of the second fraction.

LCD: 8



  - Multiply the quotient by the numerator of the second fraction. The resulting product becomes the numerator of the equivalent fraction while the LCD becomes the denominator



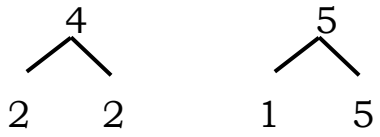
Step 3: Subtract the equivalent fractions like subtracting similar fraction.

$$\begin{array}{r} \frac{4}{9} \\ -\ \frac{3}{9} \\ \hline \mathbf{\frac{1}{9}} \end{array}$$

In subtracting dissimilar fractions, we have to change them first to similar fractions by finding the Least Common Denominator (LCD) of the fractions, and then finding their corresponding equivalent fractions.

Let's have another example: $\frac{2}{4} - \frac{2}{5}$

- Find for the LCD:

Factor Tree	Continuous Division
 4 = 2 x 2 5 = 1 x 5 LCD = 2 x 2 x 1 x 5 = 20	2 | 4, 5 2 | 2, 5 5 | 1 5 1 1 LCD = 2 x 2 x 5 x 1 x 1 = 20

- Find for the equivalent fractions.

$$\frac{2}{4} = \frac{10}{20}$$

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

- Perform the indicated operation.

$$\frac{10}{20}$$

$$- \quad \frac{8}{20}$$

$$\frac{\mathbf{2}}{\mathbf{20}} \text{ or } \frac{\mathbf{1}}{\mathbf{10}}$$

Don't forget to reduce your answer to lowest term if needed.

What's More

A. Subtract the fractions. Give your answer in simplest form.

1. $\frac{2}{5} - \frac{2}{10} =$ ☐

2. $\frac{3}{6} - \frac{5}{12} =$ ☐

3. $\frac{7}{15} - \frac{2}{5} =$ ☐

B. Subtract the following dissimilar fractions. Circle the correct answer.

4. $\frac{2}{3} - \frac{3}{5} =$ $\frac{1}{15}$ $\frac{2}{15}$ $\frac{3}{15}$

5. $\frac{2}{6} - \frac{1}{4} =$ $\frac{7}{12}$ $\frac{4}{12}$ $\frac{1}{12}$

To check, go to page 31 for the *Answer Key*. If you got a score of 4 - 5, VERY GOOD! You can proceed to the next activity. If you got 3 or below, take time to review the discussion in the previous pages.

What I Have Learned

How do you subtract dissimilar fractions?

To subtract dissimilar fractions:

a. Find first the least common denominator (LCD) or the least common multiple of the denominators given.
b. Change the fractions to similar fractions or find their corresponding equivalent fractions.
c. Subtract.
d. Reduce the answer to lowest term if needed

What I Can Do

A. Change dissimilar to similar fractions then subtract the following fractions.

1. $\frac{3}{4} = \frac{\quad}{8}$

$$-\quad \frac{3}{8} = \frac{\quad}{8}$$

_____

2. $\frac{1}{2} = \frac{\quad}{12}$

$$-\quad \frac{2}{6} = \frac{\quad}{12}$$

_____

3. $\frac{3}{4} = \frac{\quad}{4}$

$$-\quad \frac{1}{2} = \frac{\quad}{4}$$

_____

4. $\frac{5}{10} = \frac{\quad}{10}$

$$-\quad \frac{2}{5} = \frac{\quad}{10}$$

_____

5. $\frac{1}{2} = \frac{\quad}{6}$

$$-\quad \frac{1}{3} = \frac{\quad}{6}$$

_____

To check, go to page 31 for the *Answer Key*. If you got a score of 4 - 5, VERY GOOD! You can proceed to the next activity. If you got 3 or below, take time to review the discussion in the previous pages.

Assessment

A. Perform the indicated operation. Write your answer in simplest form.

1. $\frac{4}{7} = \_$
   $-\ \frac{2}{4} = \_$
   _____

2. $\frac{1}{2} = \_$
   $-\ \frac{3}{8} = \_$
   _____

3. $\frac{3}{4} = \_$
   $-\ \frac{1}{3} = \_$
   _____

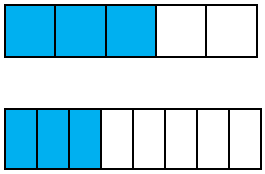
4. $\frac{3}{5} - \frac{1}{3} =$

5. $\frac{5}{6} - \frac{3}{4} =$

6. $\frac{7}{8} - \frac{3}{5} =$

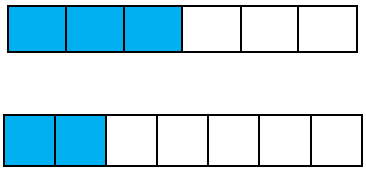
B. Write the correct number sentence then subtract the following fractions.

7.



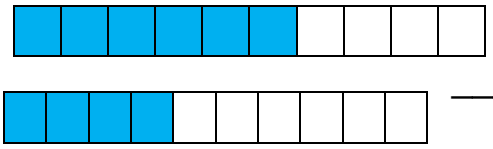
_____ - _____ = _____

8.



_____ - _____ = _____

9.

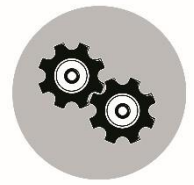


_____ - _____ = _____

10.

_____ - _____ = _____

To check, go to page 31 for the *Answer Key*. If you got a score of 8 - 10, VERY GOOD! You can proceed to the next activity. If you got 7 or below, take time to review the discussion in the previous pages.



Additional Activities

Read and solve the problem.

Ana collected $\frac{3}{4}$ kilogram of newspaper while Shane collected $\frac{5}{6}$ kilogram of newspaper. Who collected more newspapers? By how much?

To check, go to page 31 for the *Answer Key*.
Congratulations for reaching this part of the module.
You can always review the previous pages of this module if you need to.

Lesson 3: Solving Word Problems Involving Addition and Subtraction Dissimilar Fractions

What I Know

Read then solve the following problems.

(1 – 5) Mr. Anastacio likes gardening. He used $\frac{3}{8}$ sack of garden soil in one plot and $\frac{1}{4}$ sack of garden soil in another plot. How much garden soil did he use?

(6 – 10) Charisse has $\frac{8}{10}$ of chocolate bar left. She ate $\frac{2}{5}$ more. How much of the chocolate bar was left?

What's In

Fractions with different denominators are called dissimilar fractions. We add or subtract these kinds of fractions by solving first the LCD, getting the equivalent fraction then performing the indicated operation.

I have here a simple activity. You will just perform the indicated operation. Write your answer on the blank and express your answer in lowest term.

1. $\frac{4}{5} - \frac{5}{15} =$ _____

2. $\frac{5}{6} + \frac{5}{12} =$ _____

3. $\frac{4}{7} - \frac{5}{14} =$ _____

4. $\frac{6}{18} + \frac{2}{9} =$ _____

5. $\frac{7}{10} - \frac{9}{20} =$ _____

To check, go to page 32 for the *Answer Key*. If you got a score of 4 - 5, VERY GOOD! You are now ready for this module. If you got 2 or below, take time to review past lessons.

What's New

A ship is about to embark going to Matnog, Sorsogon. Among the passengers, $\frac{2}{6}$ are female adults and $\frac{1}{4}$ are male adults. The rest of the passengers are children.

If there are 120 passengers, what part of the passengers are children?

Can you come up with a plan to solve this problem? What is the first thing we should do to figure out the solution

What is It

Let us recall the steps we learned in solving word problems.

There are ways used in solving word problems. These are:

a. Drawing a Model
b. Solving for the answers using appropriate steps

A. Drawing a Model

$\frac{1}{1}$											
$\frac{2}{12}$ or $\frac{1}{6}$		$\frac{1}{6}$		$\frac{3}{12}$ or $\frac{1}{4}$							
$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$

1/1 represents all the passengers

2/6 represents the female adults

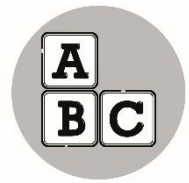
¼ represents the male adults

Both fractions can be expressed by twelfths, so we can easily tell that $\frac{5}{12}$ of the passengers are children.

B. Solving for the answer

Step 1: Understand	What facts are given? $\frac{2}{6}$ female adults $\frac{1}{4}$ male adults What is asked? What part of the passengers are children?	
Step 2: Plan	What strategy do we use? Solving for the answer.	
Step 3: Solve	$\frac{2}{6} + \frac{1}{4} = ?$	We have to make this fraction similar
	4: 4, 8, 12, 16 … 6: 6, 12, 18, 24 …	List the multiple of the denominators then identify the LCD or the LCM of the denominators LCM = 12
	$\frac{1}{4} = \frac{3}{12}$ $\frac{2}{6} = \frac{4}{12}$	Change the fraction to its equivalent fraction
	$\frac{3}{12} + \frac{4}{12} = \frac{7}{12}$ $\frac{12}{12} - \frac{7}{12} = \frac{5}{12}$	Get the sum of the fractions representing female adult passengers and the male adult passengers then subtract the sum from the fraction representing the whole of the passengers to get the part that represents the children passengers.

	The children represent $\frac{5}{12}$ of the passengers of the ship
Step 4: Look back	Ask yourself the following questions: • Did the equation help you get the correct answer? • Does the answer make sense?



What's More

Solve the word problem. Show your solution.

Cindy kept $\frac{7}{8}$ part of the chiffon cake after her morning snacks. In the afternoon, she ate again $\frac{1}{4}$ of it. What fraction of the cake was left?

To check, go to page 32 for the *Answer Key*. Take time to review the discussion in the previous pages if you need to.

What I Have Learned

There are ways used in solving word problems including:

a. Drawing a Model

b. Solving for the answers using appropriate steps

What I Can Do

Read then solve the problem.

Father cut $\frac{9}{12}$ of a piece of wood. He used $\frac{2}{6}$ of the piece of wood to cover a hole in the window. He used the remaining part to make a tool box. What part did he use for the tool box?

To check, go to page 33 for the *Answer Key*.
Take time to review the discussion in the previous pages if you need to.

Assessment

Solve the following word problems. Show your solution. (5 points)

1. Mother cooked $\frac{8}{10}$ kilogram of spaghetti. She gave $\frac{1}{5}$ kilogram of the spaghetti to her neighbor. She and her children ate the rest. How much did they eat if there is $\frac{1}{10}$ kilogram of spaghetti left?
2. Mark has $\frac{5}{6}$ liter of white paint. He also has $\frac{8}{12}$ liter of red paint. How many liters of paint is neither white nor red?

To check, go to pages 33-34 for the *Answer Key*. Take time to review the discussion in the previous pages if you need to.

Additional Activities

Read and solve the problem.

Grace makes 2 batches of pancakes. Each batch requires $\frac{1}{3}$ cup of milk and $\frac{3}{4}$ cup of pancake mix. How much pancake mix did she use? How much milk did she use?

Congratulations for reaching this part of the module. You can always review the previous pages of this module if you need to.

Answer Key

Lesson 1: Addition of Dissimilar Fractions

What I Know

1. $\frac{3}{4}+\frac{1}{3}=\frac{9}{12}+\frac{4}{12}=\frac{9+4}{12}=\frac{13}{12}$ or $1\frac{1}{12}$
2. $\frac{1}{2}-\frac{1}{3}=\frac{3}{6}-\frac{2}{6}=\frac{3-2}{6}=\frac{1}{6}$
3. $\frac{1}{6}+\frac{1}{3}=\frac{1}{6}+\frac{2}{6}=\frac{3}{6}$ or $\frac{1}{2}$
4. $\frac{1}{6}$
5. $1\frac{1}{10}$
6. $1\frac{7}{24}$
7. $\frac{3}{4}$
8. $\frac{11}{20}$
9. $\frac{13}{15}$
10. $\frac{3}{10}$

What's In

1. $6 = 2 \times 3$
   $9 = 3 \times 3$
   $\text{LCM} = 2 \times 3 \times 3 = 18$
2. $3 = 1 \times 3$
   $5 = 1 \times 5$
   $\text{LCM} = 1 \times 3 \times 5 = 15$
3. $4 = 2 \times 2$
   $10 = 2 \times 5$
   $\text{LCM} = 2 \times 2 \times 5 = 20$

What's More

1. $\frac{3}{5}$
2. $\frac{11}{12}$
3. $\frac{13}{15}$
4. $1\frac{4}{15}$
5. $\frac{7}{12}$

What I Can do

1. $\frac{8}{8}$ or 1
2. $\frac{5}{6}$
3. $\frac{5}{4}$ or 1 ¼
4. $\frac{9}{10}$
5. $\frac{7}{6}$ or $1\frac{1}{6}$

Assessment

1. $\frac{26}{28}$ or $\frac{13}{14}$
2. $\frac{7}{8}$
3. $\frac{13}{12}$ *or* $1\frac{1}{12}$
4. $\frac{14}{15}$
5. $\frac{19}{12}$ or $1\frac{7}{12}$
6. $\frac{59}{40}$ or $1\frac{19}{40}$
7. $\frac{2}{4}+\frac{5}{8}=\frac{4}{8}+\frac{5}{8}=\frac{9}{8}$ *or* $1\frac{1}{8}$
8. $\frac{2}{3}+\frac{2}{6}=\frac{4}{6}+\frac{2}{6}=\frac{6}{6}$ *or* 1
9. $\frac{4}{10}+\frac{3}{5}=\frac{4}{10}+\frac{6}{10}=\frac{10}{10}$ *or* 1
10. $\frac{6}{12}+\frac{2}{4}=\frac{6}{12}+\frac{6}{12}=\frac{12}{12}$ *or* 1

Lesson 2: Subtraction of Dissimilar Fractions

What I Know

A.

1. $\frac{3}{4} - \frac{2}{3} = \frac{1}{12}$
2. $\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$
3. $\frac{4}{6} - \frac{1}{3} = \frac{2}{6}$ or $\frac{1}{3}$
4. $\frac{5}{6} + \frac{2}{3} = \frac{9}{6}$ or $1\frac{3}{6}$ or $1\frac{1}{2}$
5. $\frac{4}{5} + \frac{5}{10} = \frac{13}{10}$ or $1\frac{3}{10}$

B.

6. $\frac{1}{12}$
7. $\frac{3}{10}$
8. $\frac{2}{9}$
9. $\frac{7}{15}$
10. $\frac{2}{5}$

What's In

1. LCM = 8
2. LCM = 24
3. LCM = 15

What's More

A.

1. $\frac{2}{10}$ or $\frac{1}{5}$
2. $\frac{1}{12}$
3. $\frac{1}{15}$

B.

4. $\frac{1}{15}$
5. $\frac{1}{12}$

What I Can do

A.

1. $\frac{6}{8} - \frac{3}{8} = \frac{3}{8}$
2. $\frac{6}{12} - \frac{4}{12} = \frac{2}{12}$ or $\frac{1}{6}$
3. $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$
4. $\frac{5}{10} - \frac{4}{10} = \frac{1}{10}$
5. $\frac{3}{6} - \frac{2}{6} = \frac{1}{6}$

Assessment

1. $\frac{1}{14}$
2. $\frac{1}{8}$
3. $\frac{5}{12}$
4. $\frac{4}{15}$
5. $\frac{1}{12}$
6. $\frac{11}{40}$
7. $\frac{9}{40}$
8. $\frac{9}{42}$
9. $\frac{7}{45}$
10. $\frac{1}{4}$

ADDITIONAL ACTIVITY

Shane collected $\frac{1}{12}$ more newspaper than Ana

Lesson 3: Solving Word Problems Involving Addition and Subtraction of Dissimilar Fractions

What I Know

(1 – 5). $\frac{3}{8} = \frac{3}{8}$

$+ \frac{1}{4} = \frac{2}{8}$

$\frac{5}{8}$ sack of soil

(6 – 10). $\frac{8}{10} = \frac{8}{10}$

$- \frac{2}{5} = \frac{4}{10}$

$\frac{4}{10}$ or $\frac{2}{5}$ of the chocolate bar was left

What's In

1. $\frac{7}{15}$ 2. $\frac{15}{12}$ or $1\frac{1}{4}$ 3. $\frac{3}{14}$ 4. $\frac{10}{18}$ or $\frac{5}{9}$ 5. $\frac{5}{20}$ or $\frac{1}{4}$

What's More

Step 1: Understand	What facts are given? $\frac{7}{8}$ part of the chiffon cake $\frac{1}{4}$ part she ate What is asked? How many parts of the cake was left?	
Step 2: Plan	What strategy do we use? Solving for the answer.	
Step 3: Solve		$\frac{7}{8} + \frac{1}{4} = ?$
	4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40 … 8: 8, 16, 24, 32, 40,	
		$\frac{7}{8} = \frac{7}{8}$ $\frac{1}{4} = \frac{2}{8}$
		$\frac{7}{8} = \frac{7}{8}$ $\frac{1}{4} = \frac{2}{8}$ $\frac{5}{8}$
		$\frac{5}{8}$ is the part of the cake was left
Step 4: Look back	Ask yourself the following questions: • Did the equation help you get the correct answer? • Does the answer make sense?	

What I Can do

Understand	What facts are give? $\frac{9}{12}$ piece of wood $\frac{2}{6}$ piece of wood use to cover a hole What is asked? What part did he use for the tool box?
Plan	What strategy do we use? Solving for the answer.
Solve	Write the number sentence $\frac{9}{12} = \frac{9}{12}$ $- \frac{2}{6} = \frac{4}{12}$ $\frac{5}{12}$ part of the wood that he use for the tool box
Look back	Ask yourself the following questions: • Did the equation help you get the correct answer? • Does the answer make sense?

Assessment

(1-5)

Understand	What facts are give? $\frac{8}{10}$ kg of spaghetti $\frac{1}{5}$ kg of spaghetti gave to her neighbor $\frac{1}{10}$ kg of spaghetti left What is asked? How much did they eat if there is $\frac{1}{10}$ kg of spaghetti left
Plan	What strategy do we use? Solving for the answer.
Solve	Write the number sentence $\frac{1}{5} = \frac{2}{10}$ $+ \frac{1}{10} = \frac{1}{10}$ $\frac{3}{10}$ kg of spaghetti left and given to their neighbor $\frac{8}{10}$ $- \frac{3}{10}$ $\frac{5}{10}$ kg of spaghetti they ate
Look back	Ask yourself the following questions: • Did the equation help you get the correct answer? • Does the answer make sense?

(6 -10)

Understand	What facts are give? $\frac{5}{6}$ liter of white paint $\frac{8}{12}$ liter of red paint What is asked? How many liters of paint is neither white nor red?
Plan	What strategy do we use? Solving for the answer.
Solve	Write the number sentence $\frac{8}{12} = \frac{8}{12}$ $+ \frac{5}{6} = \frac{10}{12}$ $\frac{18}{12}$ or $1\frac{6}{12}$ or $1\frac{1}{2}$ liters of paint neither white nor red
Look back	Ask yourself the following questions: • Did the equation help you get the correct answer? • Does the answer make sense?

References

Tabilang, Alma R. et. Al, 2015 Mathematics 4 Learner's Material pp. 112 – 128

Guadarrama, Maria Teresita A.et. Al, 2015 Number Smart Worktext in Mathematics pp. 252 - 258

For inquiries or feedback, please write or call:

Department of Education - Bureau of Learning Resources (DepEd-BLR)

Ground Floor, Bonifacio Bldg., DepEd Complex
Meralco Avenue, Pasig City, Philippines 1600

Telefax: (632) 8634-1072; 8634-1054; 8631-4985

Email Address: blr.lrqad@deped.gov.ph * blr.lrpd@deped.gov.ph