

- JANUARY**
Makugihon
- FEBRUARY**
Mahigugmaon
- MARCH**
Matinabunon
- APRIL**
Matinahuron
- MAY**
Mahapsay og Malimpyo
- JUNE**
*Maabtik og Masunod sa
Dhaklong Oras*
- JULY**
Maantigo og Maabilidad
- AUGUST**
*Maginhuhunon
para sa Urban*
- SEPTEMBER**
Madaginton
- OCTOBER**
Matinud-anon
- NOVEMBER**
Masaligan
- DECEMBER**
Maalampon



Republic of the Philippines
Department of Education
 Regional Office IX, Zamboanga Peninsula



4



MATHEMATICS

4th QUARTER – Module 2: SOLVING PROBLEMS INVOLVING PLANE FIGURES



Name of Learner: _____

Grade & Section: _____

Name of School: _____

Mathematics – Grade 4
Alternative Delivery Mode
Quarter 4 - Module 2: Solving Problems Involving Plane Figures

First Edition, 2020

Republic Act 8293, section 176 states that: No copyright shall subsist in any work of the Government of the Philippines. However, prior approval of the government agency or office wherein the work is created shall be necessary for exploitation of such work for profit. Such agency or office may, among other things, impose as a condition the payment of royalty.

Borrowed materials (i.e., songs, stories, poems, pictures, photos, brand names, trademarks, etc.) included in this module are owned by their respective copyright holders. Every effort has been exerted to locate and seek permission to use these materials from their respective copyright owners. The publisher and authors do not represent nor claim ownership over them.

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

Development Team of the Module

Writer:	Sheilah Leah C. Alvarez
Editors:	Emelyn D. Eslanan, Ed.D Randal Jay M. Ramos
Layout Artist:	Abdurauf J. Baldomero
Reviewers: EPS Mathematics	Vilma A. Brown, Ed.D
Principal	Edlin H. Aizon
Management Team: SDS	Roy C. Tuballa, EMD, JD, CESO VI
ASDS	Jay S. Montealto, CESO VI
ASDS	Norma T. Francisco, DM, CESE
EPS Mathematics	Vilma A. Brown, Ed. D.
EPS LRMS	Aida F. Coyne, Ed. D.

Printed in the Philippines
Department of Education – Region IX, Zamboanga Peninsula
Office Address: Tiguma, Airport Road, Pagadian City
Telefax: (062) – 215 – 3751; 991 – 5975
E-mail Address: region9@deped.gov.ph

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 can 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. 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

This module was written as an aid in Mathematics Grade 4, lesson for the fourth quarter module 2. The module also shows representations and word problems.

This module was designed to help pupils solve word problems involving area of different shapes. The lessons followed a developmentally sequenced teaching and learning processes to meet the curriculum requirement.

After going through the module, you are expected to solve routine and non-routine problems involving area of squares rectangles, triangles, parallelograms, and trapezoids. (M4ME-IVc-60)

Believe that learning can continue amidst the health crisis. Good luck, stay safe, and God bless.



What I Know

Directions: Read the problem carefully. Choose the letter of the correct answer. Write it on your answer sheet.

A picture frame measures 20 centimeters by 30 centimeters. How many square centimeters of glass does the frame require?

1. What are the facts given in the problem?
 - a. 20 cm and 30 cm
 - b. picture frame
 - c. square centimeter
 - d. 20 cm
2. What is asked in the problem?
 - a. What is the dimension of the frame?
 - b. What is the length of the frame?
 - c. What is the area of the frame?
 - d. What is the width of the frame?
3. What formula will be used?
 - a. $A = l \times w \times h$
 - b. $A = l \times w$
 - c. $A = b \times h$
 - d. $A = s \times s$

For questions numbers 4 and 5.

A square handkerchief has an area of 144 cm^2 side.

4. What is the length of its side?
 - a. 50 cm
 - b. 40 cm
 - c. 30 cm
 - d. 12 cm
5. If one side of the square handkerchief is doubled in length, what will be the area?
 - a. 625 cm^2
 - b. 576 cm^2
 - c. 525 cm^2
 - d. 325 cm^2

LESSON

SOLVING PROBLEMS INVOLVING PLANE FIGURES



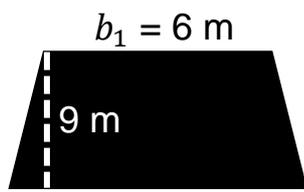
What's In

Directions: Let us find the area of each plane figure using the given formula.

1. 
 $b = 7 \text{ cm}$
 $h = 3 \text{ cm}$
 $A = b \times h$

2. 
 4 cm
 5 cm
 $A = \frac{b \times h}{2}$

3. 
 5 cm
 5 cm
 $A = s \times s$


 $b_1 = 6 \text{ m}$
 9 m
 $b_2 = 10 \text{ m}$
 $A = \frac{1}{2}(b_1 + b_2) \times h$

5. 
 2 cm
 10 cm
 $A = l \times l$





What's New

Let us try to solve this problem.

Ms. Ortiz, our Art teacher, wants us to make a mural that stimulate pupils to save the earth. It will be 3 meters wide and 5 meters long. How many square meters of wall surface are needed for the mural?



What is It

To solve the given problem, let us follow the steps below.

STEP 1. Understand

Know what is asked.

- *The number of square meters of wall surface needed for the mural.*

Know what the given facts are.

- *width = 3 m and length = 5 m*

STEP 2. Plan

What strategy do we use?

- *We use this formula **Area = length x width** to get the square meters of wall surface needed for the mural.*

STEP 3. Solve

$$\text{Area} = \text{length} \times \text{width}$$

$$A = l \times w$$

$$A = 5 \text{ m} \times 3 \text{ m}$$

$$= 15 \text{ m}^2$$

The pupils needed 15 m² for the mural.

STEP 4. Look back

Ask yourself the following questions.

1. Did you use the correct formula?
2. Did the answer make sense?
3. Did you label the answer correctly?



What's More

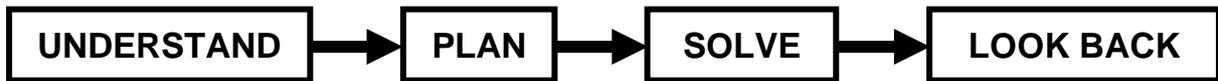
Directions: Read carefully each word problem. Solve for the correct answer.

1. A square has an area of 36 cm^2 . What is the length of its side?
2. A triangular landscape has a base of 20 meters and a height of 10 meters. Find its area.
3. The area of a rectangle is 96 m^2 . The length of the shorter side is 8m. What is the length of the longer side?
4. A parallelogram has a base of 20 meters and a height of 5 meters. What is its area?
5. A trapezoidal court has a lower base of 12 meters and an upper base of 6 meters. Its height is 4 meters. Draw the court and find the area.



What I Have Learned

In solving problems involving area of triangles, squares, rectangles, trapezoids, and parallelograms, we follow a 4 – step plan.



- **Understand** what the problem is about. Take note of the given facts and figure out what is being asked.
- **Plan.** Choose a strategy that will help you get the answer. You can draw a diagram or write number sentence to get the answer.
- **Solve.** Use strategy you have chosen to solve for the solution of the problem. Make sure to label your answer.
- **Look Back.** Ask yourself the following questions:
 1. Did you use the correct formula?
 2. Does the answer make sense?
 3. Did you label the answer correctly?



What I Can Do

Directions: Solve each of the following word problems. Draw a diagram to help you understand it.

1. A triangular flaglet has a base of 10 cm and a height of 25 cm. What is its area?
2. A trapezoidal mat has a base length of 23 cm and 25 cm. It has a height of 5 cm. What is the area of the mat?

3. Mang Tomas plans to build a pen to hold his goats. He has wood enough to cover 24 meters around the pen. What dimensions will give the possible area for the pen?
4. Mother will make a parallelogram table runner. Its base is 120 cm and a height of 30 cm. Would a cloth having an area of 4 000 cm² be enough to make the table runner?
5. One side of the concrete block measures 6 m by 9 m. Find the area of the block in square meters.



Assessment

Directions: Read each problem carefully. Choose the letter of the correct answer.

1. There are two rooms in the house that father wants to tile. The first room is a square shaped and has a side of 3 meters and the second room has the length of 5 meters and width of 2 meters What is the area of each room?

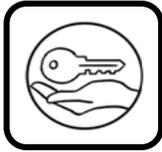
a. $12m^2$ and $15m^2$	c. $7m^2$ and $5m^2$
b. $9m^2$ and $10m^2$	d. $3m^2$ and $4m^2$
2. The area of a rectangle is 36 m². If one side is 9 meters, what is the length of the other side?

a. 4 m	b. 8 m	c. 12 m	d. 15 m
--------	--------	---------	---------
3. A trapezoidal garden has a lower base of 6 m and an upper base of 4 m. Its height is 3 m. What is the area of the garden?

a. 20 m ²	b. 18 m ²	c. 16 m ²	d. 15 m ²
----------------------	----------------------	----------------------	----------------------
4. Jerry and his son jog around the triangular block of the subdivision every Sunday, what is the area of the block if the base is 20 meters and its height is 13 meters?

a. 150 m ²	b. 140 m ²	c. 130 m ²	d. 120 m ²
-----------------------	-----------------------	-----------------------	-----------------------

5. A parallelogram window frame has an area of $3\,500\text{ cm}^2$ and a height of 50 cm . What is its base?
- a. 70 cm b. 25 cm c. 15 cm d. 3 cm



Answer Key

What I Know: 1. a 2. c 3. b 4. d 5. b

What's In: 1. 21 cm² 2. 10 cm² 3. 25 cm² 4. 72 m² 5. 20 cm²

What's New: 1. Ms. Ortiz
2. She wants the pupils to make a mural.
3. It is the only planet in which we live (Answers may vary)

What's More: 1. 6 cm 2. 100 cm² 3. 12 m 4. 100 m² 5. 36 m²

What I Can Do: 1. 125 cm²
2. 120 cm²
3. L-11, W-1 Area: 11m²
L-10, W-2 Area: 20m²
L-9, W-3 Area: 27m²
L-8, W-4 Area: 32m²
L-7, W-5 Area: 35m²
L-6 Area: 36m²
4. YES
5. 54 m²

Assessment: 1. b 2. a 3. d 4. c 5. a

Reference:

Alma R. Tabilang et al., *MATHEMATICS 4 LM*, Pasig City, Rex bookstore publishing, INC. 2014, 45-46.

Herminia D. Torres, Ph.D et al *Number Smart 4 Revised Edition*, Pasig City, Rex bookstore publishing, INC, 472- 479.

I AM A FILIPINO

by Carlos P. Romulo

I am a Filipino – inheritor of a glorious past, hostage to the uncertain future. As such, I must prove equal to a two-fold task – the task of meeting my responsibility to the past, and the task of performing my obligation to the future.

I am sprung from a hardy race – child many generations removed of ancient Malayan pioneers. Across the centuries, the memory comes rushing back to me: of brown-skinned men putting out to sea in ships that were as frail as their hearts were stout. Over the sea I see them come, borne upon the billowing wave and the whistling wind, carried upon the mighty swell of hope – hope in the free abundance of the new land that was to be their home and their children’s forever.

This is the land they sought and found. Every inch of shore that their eyes first set upon, every hill and mountain that beckoned to them with a green and purple invitation, every mile of rolling plain that their view encompassed, every river and lake that promised a plentiful living and the fruitfulness of commerce, is a hollowed spot to me.

By the strength of their hearts and hands, by every right of law, human and divine, this land and all the appurtenances thereof – the black and fertile soil, the seas and lakes and rivers teeming with fish, the forests with their inexhaustible wealth in wild and timber, the mountains with their bowels swollen with minerals – the whole of this rich and happy land has been for centuries without number, the land of my fathers. This land I received in trust from them, and in trust will pass it to my children, and so on until the world is no more.

I am a Filipino. In my blood runs the immortal seed of heroes – seed that flowered down the centuries in deeds of courage and defiance. In my veins yet pulses the same hot blood that sent Lapulapu to battle against the alien foe, that drove Diego Silang and Dagohoy into rebellion against the foreign oppressor.

That seed is immortal. It is the self-same seed that flowered in the heart of Jose Rizal that morning in Bagumbayan when a volley of shots put an end to all that was mortal of him and made his spirit deathless forever; the same that flowered in the hearts of Bonifacio in Balintawak, of Gregorio del Pilar at Tirad Pass, of Antonio Luna at Calumpit, that bloomed in flowers of frustration in the sad heart of Emilio Aguinaldo at Palanan, and yet burst forth royally again in the proud heart of Manuel L. Quezon when he stood at last on the threshold of ancient Malacanang Palace, in the symbolic act of possession and racial vindication. The seed I bear within me is an immortal seed.

It is the mark of my manhood, the symbol of my dignity as a human being. Like the seeds that were once buried in the tomb of Tutankhamen many thousands of years ago, it shall grow and flower and bear fruit again. It is the insigne of my race, and my generation is but a stage in the unending search of my people for freedom and happiness.

I am a Filipino, child of the marriage of the East and the West. The East, with its languor and mysticism, its passivity and endurance, was my mother, and my sire was the West that came thundering across the seas with the Cross and Sword and the Machine. I am of the East, an eager participant in its struggles for liberation from the imperialist yoke. But I know also that the East must awake from its centuried sleep, shake off the lethargy that has bound its limbs, and start moving where destiny awaits.

For I, too, am of the West, and the vigorous peoples of the West have destroyed forever the peace and quiet that once were ours. I can no longer live, a being apart from those whose world now trembles to the roar of bomb and cannon shot. For no man and no nation is an island, but a part of the main, and there is no longer any East and West – only individuals and nations making those momentous choices that are the hinges upon which history revolves. At the vanguard of progress in this part of the world I stand – a forlorn figure in the eyes of some, but not one defeated and lost. For through the thick, interlacing branches of habit and custom above me I have seen the light of the sun, and I know that it is good. I have seen the light of justice and equality and freedom, my heart has been lifted by the vision of democracy, and I shall not rest until my land and my people shall have been blessed by these, beyond the power of any man or nation to subvert or destroy.

I am a Filipino, and this is my inheritance. What pledge shall I give that I may prove worthy of my inheritance? I shall give the pledge that has come ringing down the corridors of the centuries, and it shall be compounded of the joyous cries of my Malayan forebears when first they saw the contours of this land loom before their eyes, of the battle cries that have resounded in every field of combat from Mactan to Tirad Pass, of the voices of my people when they sing:

“I am a Filipino born to freedom, and I shall not rest until freedom shall have been added unto my inheritance—for myself and my children and my children’s children—forever.”