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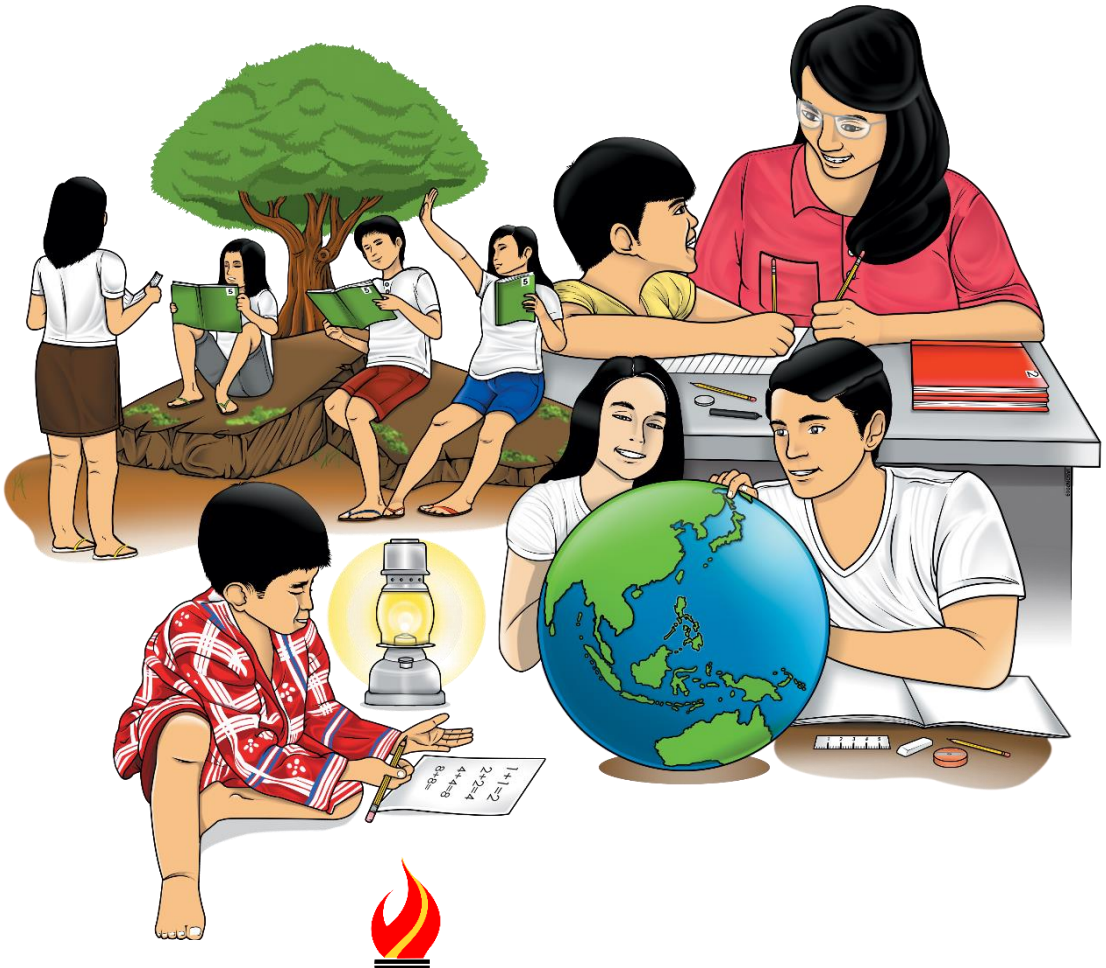
# Mathematics

## Quarter 4 – Module 2:
## Finding the Area of Triangles, Parallelograms and Trapezoids



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ADM

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**Alternative Delivery Mode**
**Quarter 4 – Module 2: Finding the Area of Triangles, Parallelograms and Trapezoids**
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# Mathematics

## Quarter 4 – Module 2:
## Finding the Area of Triangles, Parallelograms and Trapezoids

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# 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*

When we see a plane figure, we consider not only its perimeter but also its area, which is the amount of surface occupied by the figure.

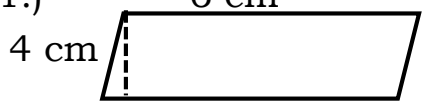
In this module, you will explore the area of a parallelogram and derive a formula for finding its area given its base and height.

At the end of this module, you should be able to find the area of a parallelogram using sq. cm and sq. m.

## *What I Know*

Find the area of each parallelogram given the measures of its base and height. Choose the letter corresponding to the correct answer from the given choices in the box.

1.)

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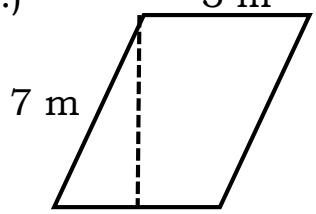


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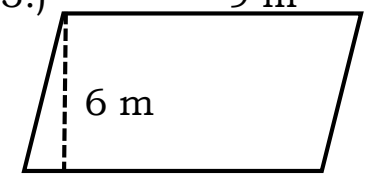


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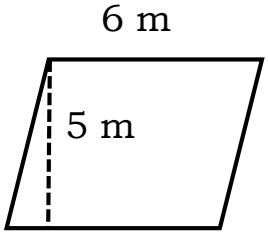


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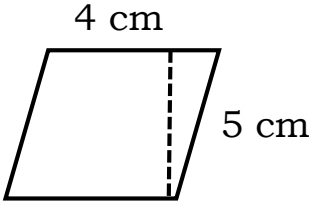

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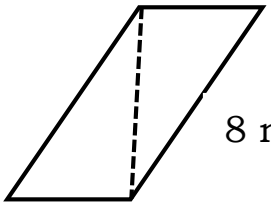


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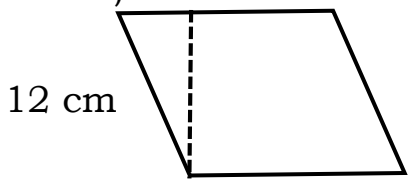


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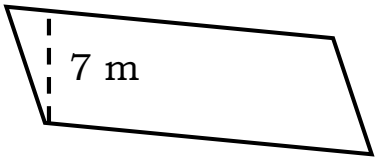


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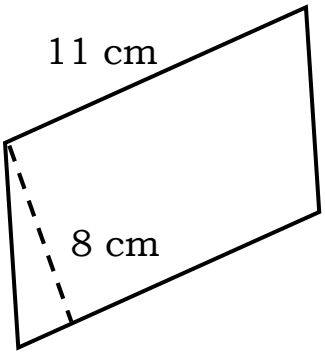


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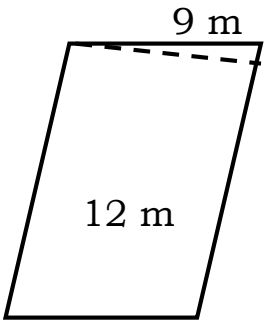



| | | |
|---|---|---|
| a. 30 $m^2$ | b. 22 $m^2$ | c. 20 $cm^2$ |
| d. 54 $m^2$ | e. 24 $cm^2$ | f. 40 $m^2$ |
| g. 88 $cm^2$ | h. 120 $cm^2$ | i. 112 $m^2$ |
| j. 108 $m^2$ | k. 21 $m^2$ | l. 55 $m^2$ |

Are you done answering?
If yes, time to check. Please go to page 34 for the ***Answer Key***.

CONGRATULATIONS! If you got a score of 9 or 10, you should not have any difficulty studying the lesson in this module.

If you got a score of 8 or below, you may need to study the lesson more carefully and do all the given activities.

# Lesson 1 Finding the Area of a Parallelogram

## *What's In*

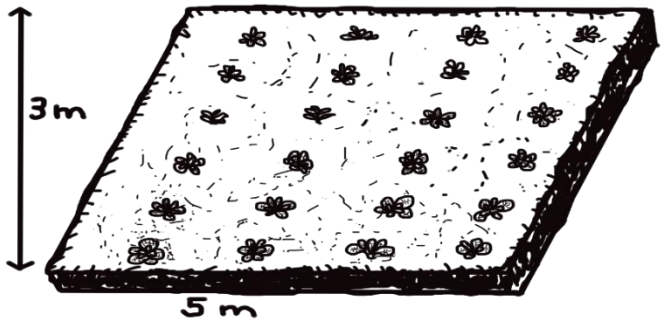
Write TRUE if the statement is a property of a parallelogram and FALSE if it is not.

1. It has 2 pairs of parallel sides.
2. It has no right angles.
3. Opposite angles are congruent.
4. Adjacent angles are supplementary.
5. It has 4 angles.

Are you done answering?
If yes, time to check. Please go to page 34 for the ***Answer Key***.

## *What's New*

Diane and her groupmates have a parallelogram-shaped vegetable garden. It has a base of 5 meters and a height of 3 meters. They planted it with *pechay*. She is interested in finding the area of the vegetable garden but she does not know how to do it.

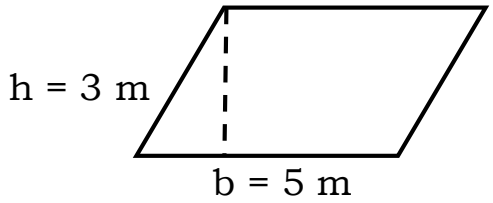



What did the problem ask for?
How can we help Diane?

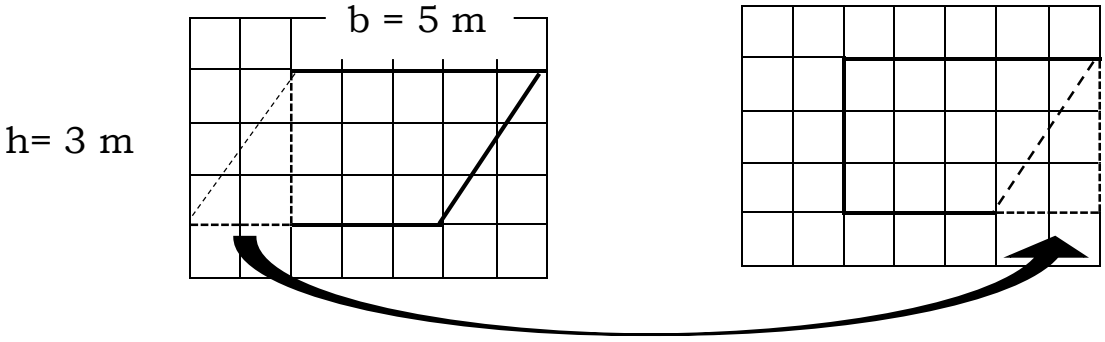
## *What is It*

Let us help Diane find the area of the parallelogram-shaped vegetable garden.

The vegetable garden has the shape of a parallelogram. Its base (b) is 5 m and its height (h) is 3 m.




The illustration below shows how the parallelogram may be transformed into a rectangle.

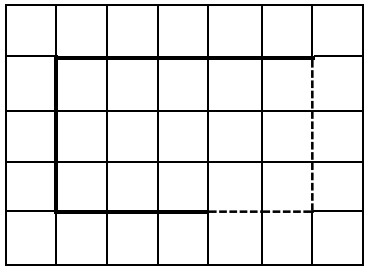



Will the change in shape result to a change in the figure's area? No.

Will the parallelogram and the resulting rectangle have the same area? Yes.

So, what is the length and width of the rectangle?

length = 5 m ; width = 3 m




How are the base (b) and the height (h) related to the length (l) and width (w) of
the rectangle formed?

b = l ;  h = w

By counting the number of squares covered by the rectangle, where each square unit is equal to 1 sq. m, we say that the area of the rectangle is 15 sq. m.

A = l x w
= 5 m x 3 m
= 15 sq. m or
15 $m^2$

Using the formula, the area of the rectangle is the product of its length (l) and width (w).

Since the area of a rectangle can be found by multiplying its length by its width, you can find the area of the parallelogram by multiplying the base (b) by its height (h).

Therefore, the area of a parallelogram is the product of its base and height.

Area of a Parallelogram = base (b) x height (h) or
A = b x h

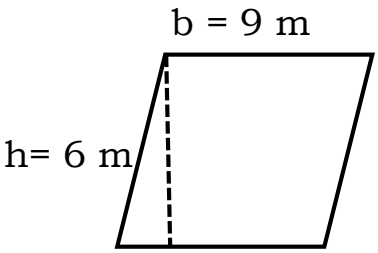
Let us find the area of the parallelogram-shaped vegetable garden using the formula.

A = b x h
= 5 m x 3 m
= 15 $m^2$

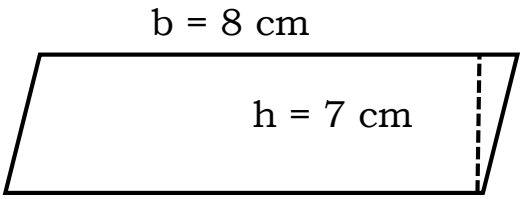
- Substitute the length of the base for *b* and height for *h.*
- Multiply.

**Thus, the area of their vegetable garden is 15 $m^2$.**

Let's try another example. Let us find the area of each parallelogram using the formula (A = b x h). Express your answer in square units.



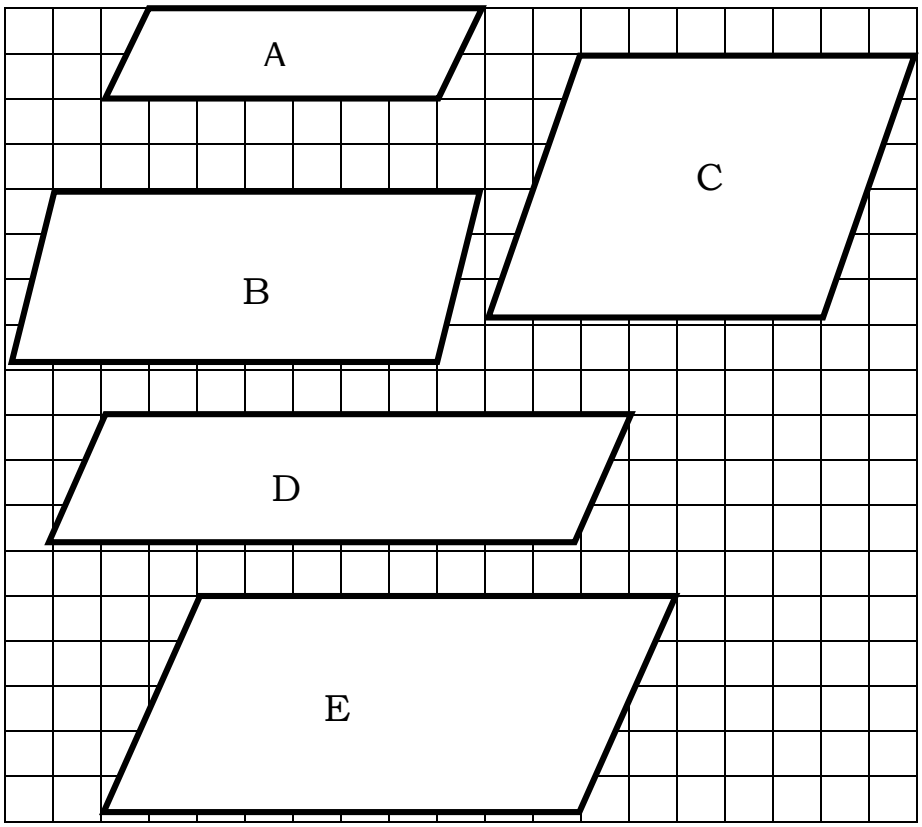

A = b x h
= 9 m x 6 m
= 54 $m^2$




A = b x h
= 8 cm x 7 cm
= 56 $cm^2$

## *What's More*

Complete the table.
Give the base and height of each parallelogram. Then, find its area using the formula A = b x h. (1 unit = 1 cm)




| Parallelogram | Base | Height | Area |
|---|---|---|---|
| A | | | |
| B | | | |
| C | | | |
| D | | | |
| E | | | |

Are you done answering?
If yes, time to check. Please go to page 34 for the ***Answer Key***.

## *What I Have Learned*

Let us summarize what you have learned:

Area is the measurement of the space contained within a plane figure. To find the area of a parallelogram:

- multiply the base and height.

## *What I Can Do*

Find the area of the parallelogram with the following dimensions.

1. b = 4 m
   h = 10 m
   A = _____

2. b = 5 cm
   h = 13 cm
   A = _____

3. b = 9 m
   h = 10 m
   A = _____

4. b = 21 cm
   h = 2 cm
   A = _____

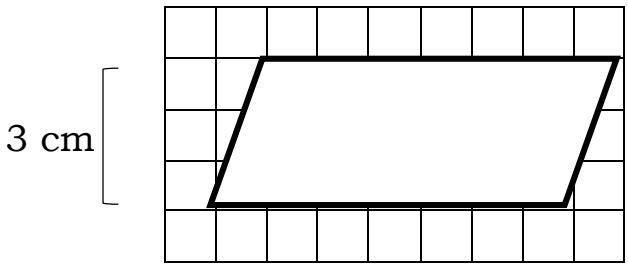
5. b = 6 m
   h = 11 m
   A = _____

Are you done answering?
If yes, time to check. Please go to page 34 for the ***Answer Key***.

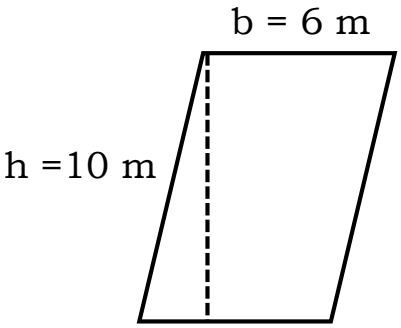
## *Assessment*

A. Multiple Choice. Choose the letter of the best answer.

1. What is the area of the parallelogram?
   A. 10 sq. cm
   B. 12 sq. cm
   C. 18 sq. cm
   D. 22 sq. cm

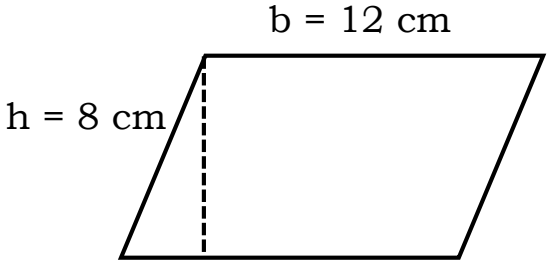



2. The base of a parallelogram is 6 m and its height is 10 meters. What is the area of the parallelogram?




A. 50 $m^2$
B. 55 $m^2$
C. 60 $m^2$
D. 65 $m^2$

3. The base of a parallelogram is 12 cm and its height is 8 cm. What is the area of the parallelogram?

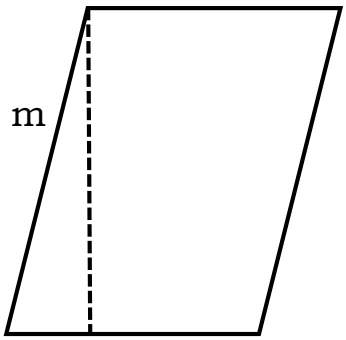



A. 98 $cm^2$
B. 96 $cm^2$
C. 95 $cm^2$
D. 94 $cm^2$

B. Find the area of each parallelogram using the formula.

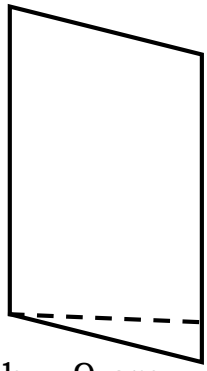
4. b = 9 m

h = 14 m



5.

b = 11 cm



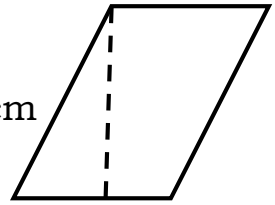
h = 9 cm

6. b = 13 m

h = 4 m

7. b = 7 cm

h = 8 cm

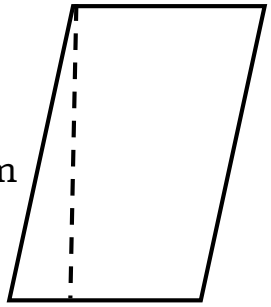


8. b = 15 m

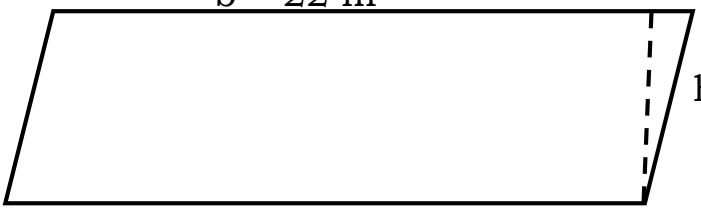
h = 4 m

9. b = 8 cm

h = 15 cm



10. b = 22 m



h = 9 m

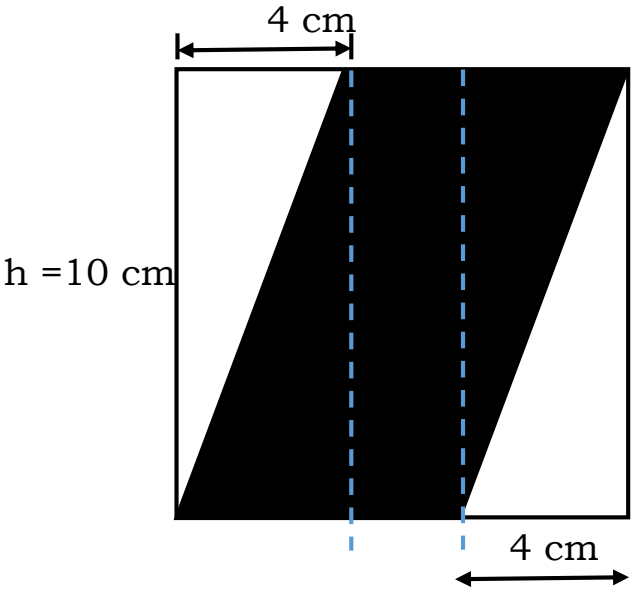
Are you done answering?
If yes, time to check. Please go to page 34 for the ***Answer Key***.

Got a score of 8 -10? EXCELLENT! You already understood the lesson. You are now ready for the next lesson.

If your score is below 8, kindly study again the lesson and the activities.

## *Additional Activities*

Find the area of the shaded region of the square.




Are you done answering?
If yes, time to check. Please go to page 34 for the ***Answer Key***.

## *What I Need to Know*

How did you find the activities in the previous lesson?

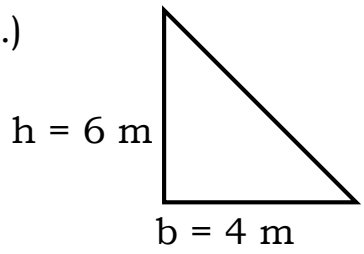
In this module, you will explore and derive the formula for finding the area of a three-sided polygon.

At the end of this module, you should be able to find the area of a triangle using sq. cm and sq. m.

## *What I Know*

Solve for the area of each triangle.

1.)

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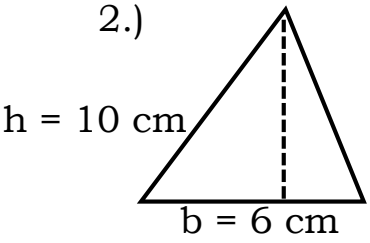


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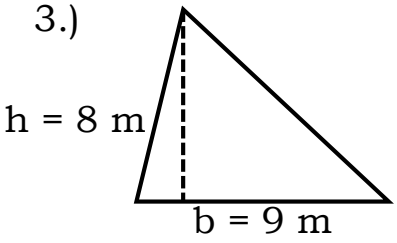


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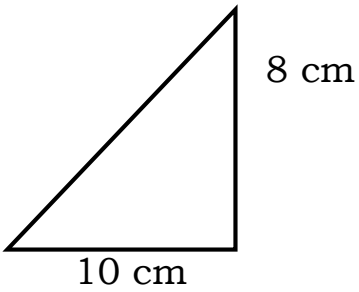


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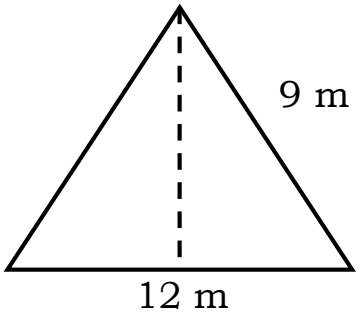



6. b = 12 m
   h = 4 m
   A = _____

7. b = 20 cm
   h = 10 cm
   A = _____

8. b = 15 cm
   h = 8 cm
   A = _____

9. b = 14 m
   h = 6 m
   A = _____

10. b = 15 cm
    h = 16 cm
    A = _____

Are you done answering?
If yes, time to check. Please go to page 35 for the ***Answer Key***.

CONGRATULATIONS! If you got a score of 9 or 10, you should not have any difficulty studying the lesson in this module.

If you got a score of 8 or below, you may need to study the lesson more carefully and do all the given activities.

# Lesson 2 Finding the Area of a Triangle

## *What's In*

Solve.

1. $\frac{10 \times 8}{4} =$ ◯

2. $\frac{1}{2}(5 \times 6) =$ ◯

3. $7 \times 6 \div 2 =$ ◯

4. $\frac{9 \times 6}{2} =$ ◯

5. $30 \times 2 \div 5 =$ ◯

Are you done answering?
If yes, time to check. Please go to page 35 for the ***Answer Key***.

In performing a series of operations, we must follow the MDAS Rule. MDAS stands for the 4 basic operations – Multiplication, Division, Addition and Subtraction.

The rule says that:

- Multiply or divide first in the order they come, from left to right.
- Add or subtract in the order they come, from left to right.

Let's have the following examples.

1. $4 \times 50 \div 5 = n$
   $200 \div 5 = n$
   $40 = n$

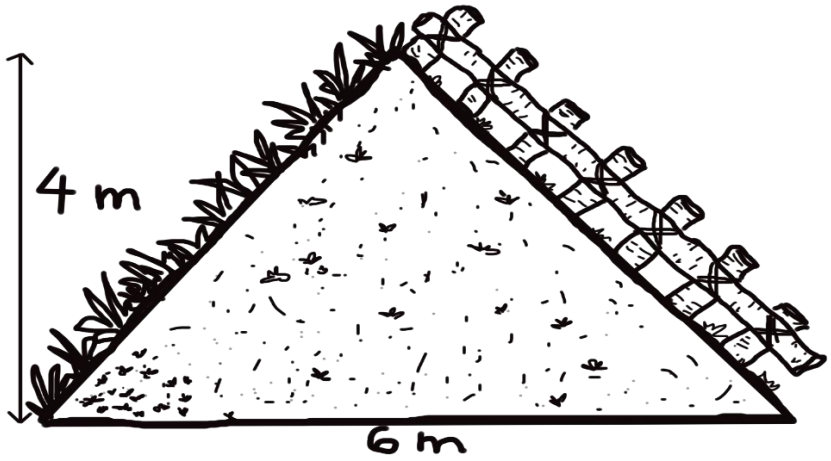
2. $20 \div 4 \times 3 = n$
   $5 \times 3 = n$
   $15 = n$

Both equations involved multiplication and division. We applied rule No. 1, that is, multiply or divide first in the order they come, from left to right.

## *What's New*

Let us study the situational problem.

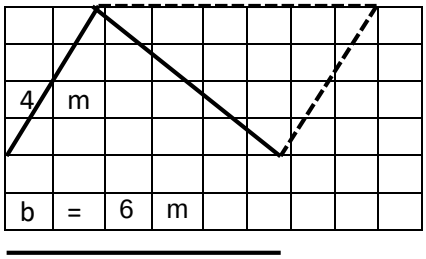
Karen has a botanical garden. The garden is triangular in shape. The length of the base is 6 meters and the height is 4 meters. She would like to cover the whole area of the garden with carabao grass. How many square meters of carabao grass are needed?




What is the shape of the botanical garden?
What is asked in the problem?
How can we find the area of the triangular botanical garden?

## *What is It*

The illustration below will help us find the area of the garden. The botanical garden has the shape of a triangle. The length of its base is 6 m and its height is 4 m.




If we draw another triangle that is exactly
the same as the given triangle and arrange
these 2 triangles as shown in the figure, a parallelogram is formed.

From the illustration, we see that the base of the parallelogram is 6 m and its height is 4 m. Thus, the area of the parallelogram is 24 sq. m or 24 $m^2$. Since the triangle is $\frac{1}{2}$ of the parallelogram, the area of the triangle is $\frac{1}{2}$ of the area of the parallelogram. That is, 24 $m^2 \div 2 = 12$ $m^2$.

Try the activity using another pair of congruent triangles. You will find that any pair of congruent triangles will always form a parallelogram. Likewise, you will see that the area of the triangle is half the area of a parallelogram (A = bh).

So, the formula in finding the area of a triangle is:

Area of a triangle = $\frac{1}{2}$ (b x h) or $A = \frac{b \times h}{2}$

where b = base of the triangle
h = height of the triangle

Let's find the area of the triangular botanical garden using the formula.

$$A = \frac{b \times h}{2}$$

$$= \frac{6\text{ m} \times 4\text{ m}}{2}$$

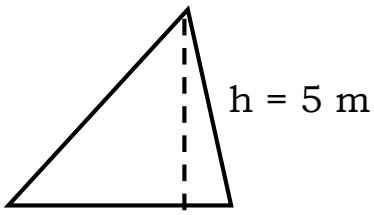
$$= \frac{24\text{ sq. m}}{2}$$

$$= 12\text{ sq. m}$$

**Therefore, the area of the botanical garden is 12 $m^2$.**

Let us solve for the area of the following triangles using the formula.

1.



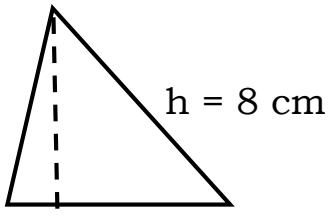

$$A = \frac{1}{2}(b \times h)$$

$$= \frac{1}{2}(6\text{ m} \times 5\text{ m})$$

$$= \frac{1}{2}(30\ m^2)$$

$$= 15\ m^2$$

2.




$$A = \frac{b \times h}{2}$$

$$= \frac{5\text{ cm} \times 8\text{ cm}}{2}$$

$$= \frac{40\text{ sq cm}}{2}$$

$$= 20\text{ sq. cm}$$

## *What's More*

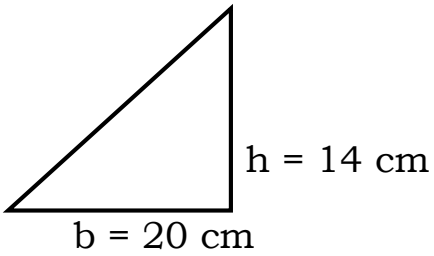
Find the area of each triangle.
Given the height and the base, fill in the blank to complete the solution.

1. $A = \frac{b \times h}{2}$

$= \frac{20\text{ cm} \times 14\text{ cm}}{2}$

$= \frac{280\text{ sq.cm}}{2}$

A = _____ sq. cm

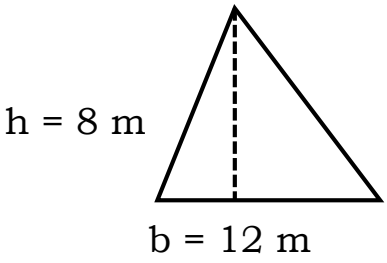



2. $A = \frac{b \times h}{2}$

$= \frac{12\text{ m} \times 8\text{ m}}{2}$

$= \frac{\_\_\_\_\text{ sq. m}}{2}$

A = ____ sq. m

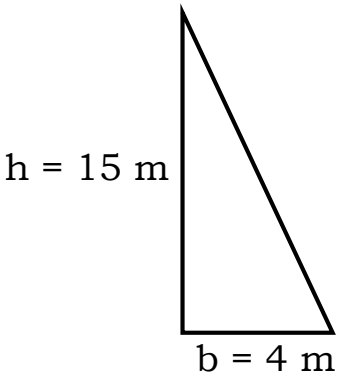



3. $A = \frac{b \times h}{2}$

$= \frac{4\text{ m} \times 15\text{ m}}{2}$

$= \frac{\_\_\_\_\text{ sq. m}}{2}$

A = ____ sq. m




Are you done answering?
If yes, time to check. Please go to page 35 for the ***Answer Key***.

## *What I Have Learned*

Let us summarize what you have learned:

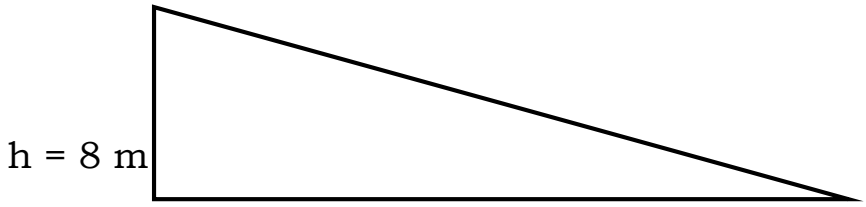
The area of a triangle with a given base (b) and height (h) can be solved by the formula:

- Area of a triangle (A) = $\frac{1}{2}$ (b x h) or A = $\frac{\mathbf{b \times h}}{\mathbf{2}}$ .

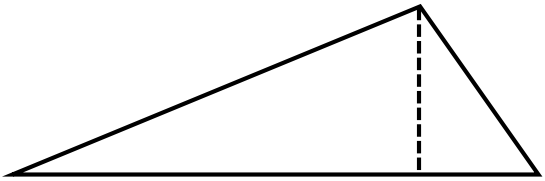
## *What I Can Do*

Find the area of each triangle using the formula, A = $\frac{\mathbf{b \times h}}{\mathbf{2}}$ **or** $\frac{\mathbf{1}}{\mathbf{2}}$ (b x h)

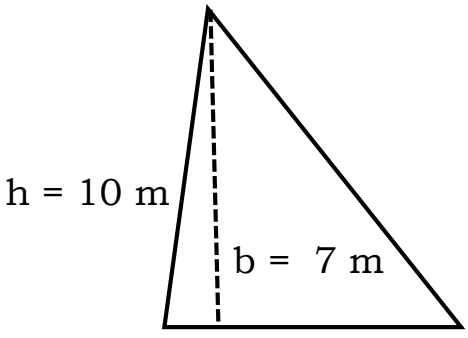
1.




2.




3.

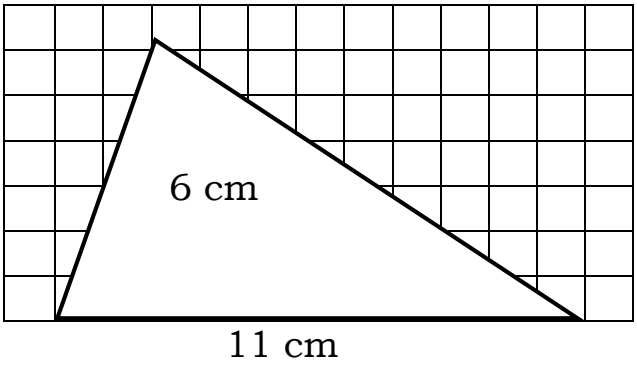



Are you done answering?
If yes, time to check. Please go to page 35 for the ***Answer Key***.

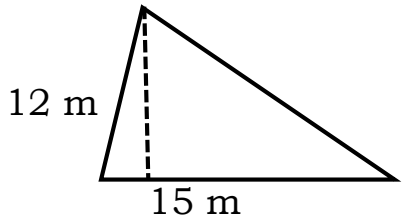
## *Assessment*

A. Multiple Choice. Read and understand each item carefully. Choose the letter of the correct answer.

1. What is the area of the triangle?
   A. 36 sq. cm
   B. 33 sq. cm
   C. 22 sq. cm
   D. 17 sq. cm




2. A triangular landscape has a base of 15 m and a height of 12 m. Find its area.




A. 80 $m^2$ B. 85 $m^2$ C. 90 $m^2$ D. 100 $m^2$

3. Find the area of George's lantern, which is a triangle with a base of 30 cm and a height of 20 cm.
   A. 300 sq. cm B. 310 sq. cm C. 320 sq. cm D. 330 sq. cm

4. A triangular garden is 7 m wide and 16 m long. What is its area?
   A. 58 $m^2$ B. 56 $m^2$ C. 55 $m^2$ D. 54 $m^2$

5. Manny's flaglet is 26 cm long and 14 cm wide. Find the area of such triangle.
   A. 183 sq. cm B. 182 sq. cm C. 181 sq. cm D. 180 sq. cm

B. Complete the table. Use the formula for the area of a triangle.

| Triangle | Base (b) | Height (h) | Area (A) |
|---|---|---|---|
| 6 | 18 cm | 12 cm | |
| 7 | 24 cm | 10 cm | |
| 8 | 30 m | 6 m | |
| 9 | 21 m | 8 m | |
| 10 | 18 cm | 26 cm | |

Are you done answering?
If yes, time to check. Please go to page 35 for the ***Answer Key***.

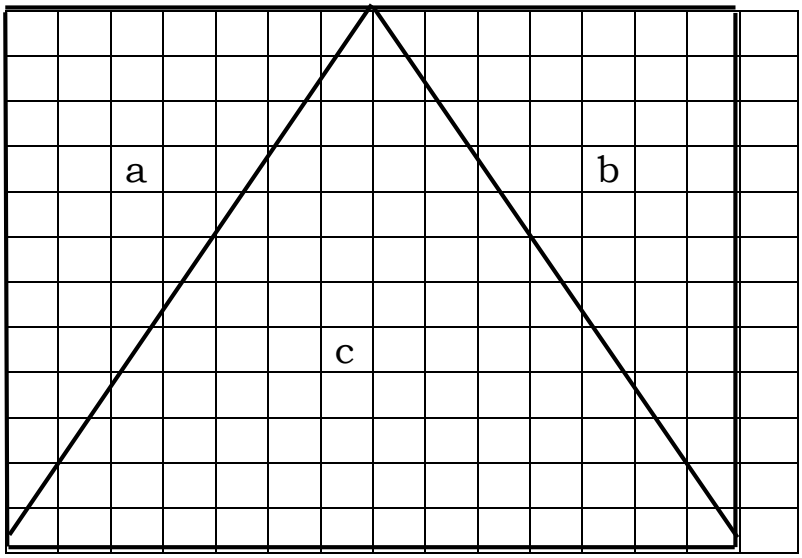
Got a score of 8 -10? EXCELLENT! You already understood the lesson. You are now ready for the next lesson.

If your score is below 8, kindly study again the lesson and the activities.

## *Additional Activities*

A quilt is designed using two congruent right triangles and an isosceles triangle as shown below.

- Find the area of the three pieces using the formula.
- Compare the area of the right triangle to the area of the isosceles triangle. Each square unit is 1 sq. m.




Are you done answering?
If yes, time to check. Please go to page 35 for the ***Answer Key***.

## *What I Need to Know*

In the previous modules, we learned how to solve for the areas of parallelograms and triangles.

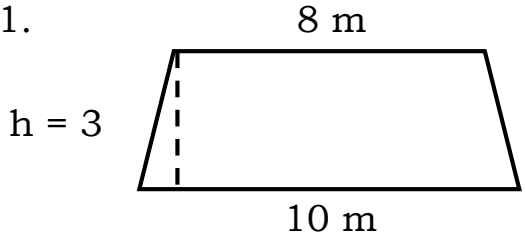
Now, we will explore and derive the formula for finding the area of another 4-sided polygon - the trapezoid.

At the end of this module, you should be able to find the area of a trapezoid using sq. cm and sq. m.

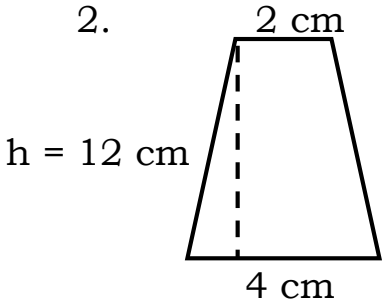
## *What I Know*

Find the area of each trapezoid.

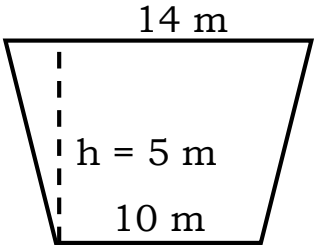
1.



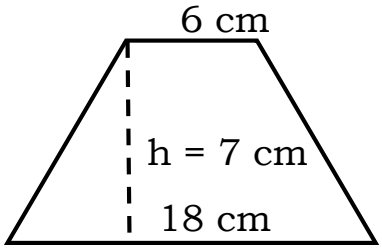

2.




3.




4.




5. $b_1$ = 4 m
   $b_2$ = 6 m
   h = 8 m
   A = _____ $m^2$

6. $b_1$ = 10 cm
   $b_2$ = 4 cm
   h = 5 cm
   A = _____ $cm^2$

7. $b_1$ = 5 m
   $b_2$ = 7 m
   h = 4 m
   A = ____ $m^2$

8. $b_1$ = 8 cm
   $b_2$ = 9 cm
   h = 6 cm
   A = _____ $cm^2$

9. $b_1$ = 10 m
   $b_2$ = 13 m
   h = 8 m
   A = _____ $m^2$

10. $b_1$ = 12 cm
    $b_2$ = 15 cm
    h = 6 cm
    A = _____$cm^2$

Are you done answering?
If yes, time to check. Please go to page 36 for the ***Answer Key***.

CONGRATULATIONS! If you got a score of 9 or 10, you should not have any difficulty studying the lesson in this module.

If you got a score of 8 or below, you may need to study the lesson more carefully and do all the given activities.

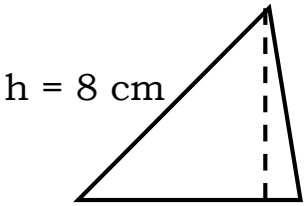
# Lesson 3 Finding the Area of a Trapezoid

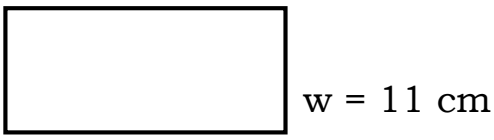
## *What's In*

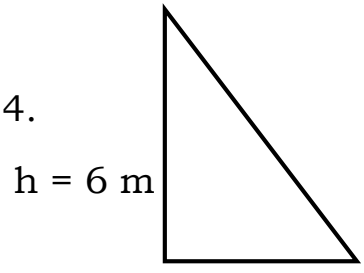
Match the figures in Column A with their corresponding areas in Column B. Choose the letter of the correct answer.

**A** **B**

1. 


2. 


3. 


4. 


a. 15 $m^2$

b. 20 $cm^2$

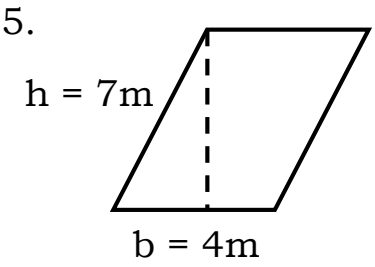
c. 27 $m^2$

d. 28 $m^2$

e. 40 $cm^2$

f. 88 $cm^2$

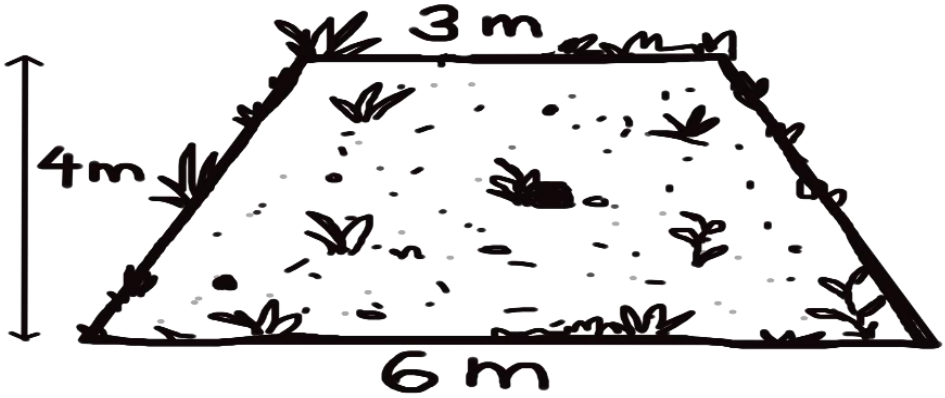
5.




Are you done answering?
If yes, time to check. Please go to page 36 for the ***Answer Key***.

## *What's New*

Mr. Cruz cultivated a small garden lot in the shape of a trapezoid. The bases are 3 meters and 6 meters, while the distance between the two bases is 4 meters. What is the area of the lot?

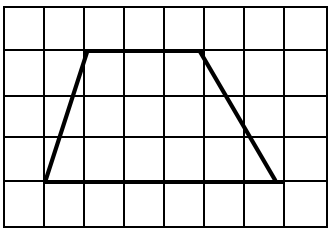



What is the shape of the garden lot?
What is asked in the problem?
How are we going to find the area of the garden lot?

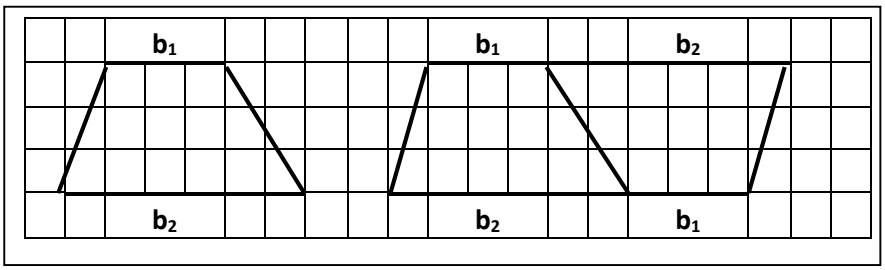
## *What is It*

To find the area of the garden lot, we need to find the area of the trapezoid.

The lot has an upper base of 3 meters and a lower base of 6 meters. Its height is 4 meters.



If we take another trapezoid that is exactly the same as the first, we can form a parallelogram as shown below.




We can say that the base of the parallelogram is the sum of $b_1$ and $b_2$ of the trapezoid. We can also say that the area of the given trapezoid is $\frac{1}{2}$ that of the parallelogram.

The area of the parallelogram can be solved using the formula:

$A = b \times h$
$A = (3\text{ m} + 6\text{ m}) \times 4\text{ m}$
$A = 9\text{ m} \times 4\text{ m}$
$A = 36\text{ m}^2$

3 m is the upper base ($b_1$)
and 6 m is the lower base ($b_2$)

Since it takes two congruent trapezoids to form the parallelogram, then we can say that the area of the trapezoid is $\frac{1}{2}$ the area of the parallelogram.

Thus, the area of the farm lot is:

$$A = \frac{1}{2} (3 \text{ m} + 6 \text{ m}) \times 4 \text{ m}$$

$$= \frac{1}{2} (9 \text{ m}) \times 4 \text{ m}$$

$$= \frac{1}{2} (36 \text{ m}^2)$$

$$= 18 \text{ m}^2$$

**Therefore, the area of the trapezoidal garden lot is 18 $m^2$.**

To solve for the area of a trapezoid, we use this formula:

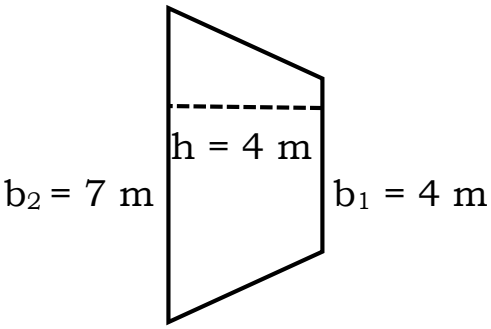
Area of a trapezoid (A) = $\frac{1}{2} (b_1 + b_2) \times h$ or $A = \frac{(b_1+b_2) \times h}{2}$

where:

$b_1$ and $b_2$ are the bases; and
h is the height of the trapezoid

Let us take a look at another example.

A. Let us find the area of this trapezoid.




$$A = \frac{1}{2}(b_1 + b_2) \times h$$

$$= \frac{1}{2}(4\text{ m} + 7\text{ m}) \times 4\text{ m}$$

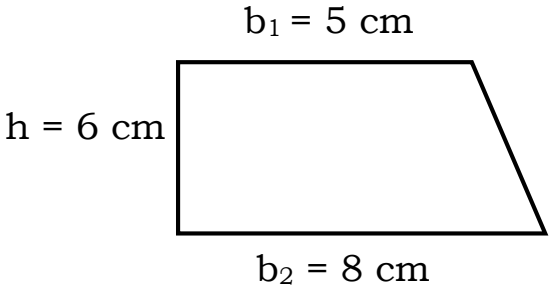
$$= \frac{1}{2}(11\text{ m}) \times 4\text{ m}$$

$$= \frac{1}{2}\ (44\text{ sq. m})$$

$$= 22\text{ sq. m or } 22\text{ m}^2$$

**Therefore, the area of the trapezoid is 22 m².**

B. Let us try another one.




$$A = \frac{(b_1+b_2)\text{x h}}{2}$$

$$= \frac{(5\text{ cm}+8\text{ cm})\text{x }6\text{ cm}}{2}$$

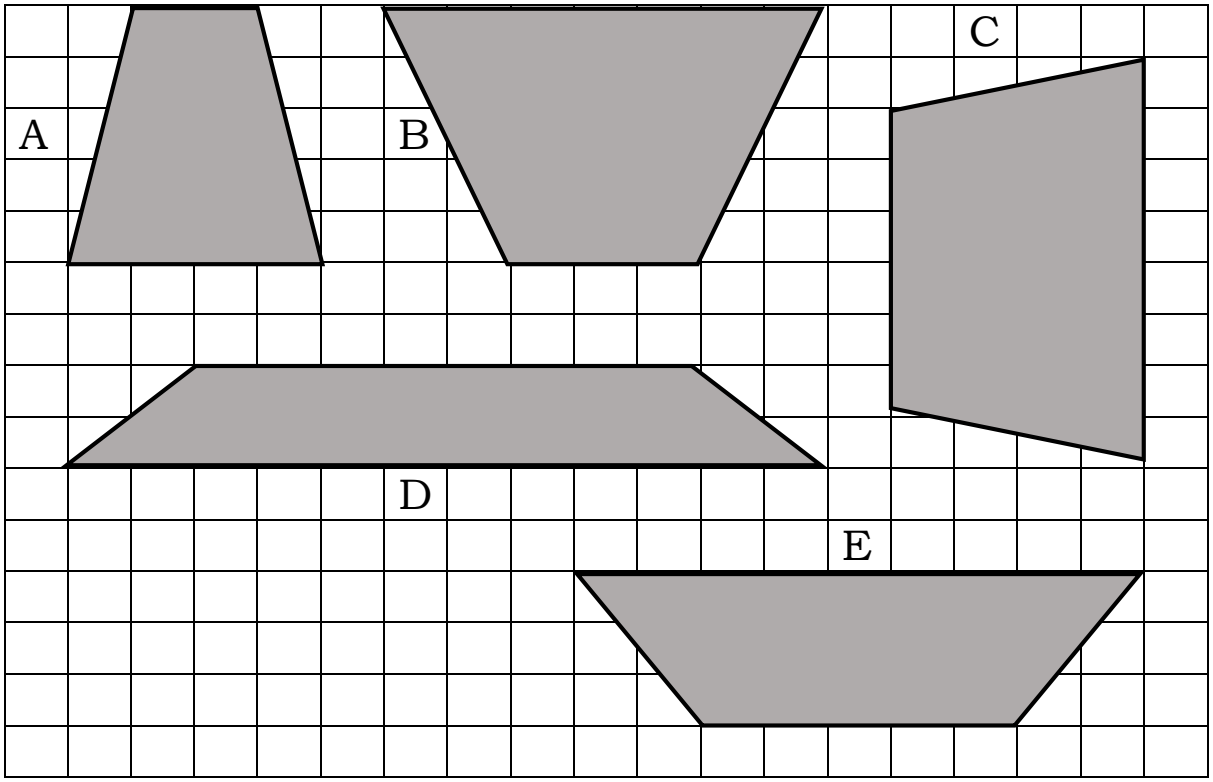
$$= \frac{(13\text{ cm})\text{x }6\text{ cm}}{2}$$

$$= \frac{78\text{ sq. cm}}{2}$$

$$A = 39\text{ sq. cm or } 39\text{ cm}^2$$

## *What's More*

Complete the table below by giving the base and height of each trapezoid in cm, then find the corresponding area by using the formula. Each square of the grid is 1 cm by 1 cm.




| Trapezoid | $b_1$ | $b_2$ | h | Area (A) |
|---|---|---|---|---|
| A | 2 cm | _____ | 5 cm | _____ |
| B | 7 cm | 3 cm | _____ | _____ |
| C | _____ | 8 cm | 4 cm | _____ |
| D | 8 cm | _____ | 2cm | _____ |
| E | 9 cm | 5 cm | _____ | _____ |

Are you done answering?
If yes, time to check. Please go to page 36 for the ***Answer Key***.

## *What I Have Learned*

Let us summarize what you have learned:

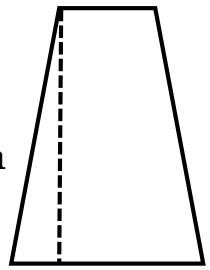
- The area of a **trapezoid** is half its height multiplied by the sum of the lengths of its two bases.
- The formula to obtain the area of a trapezoid is:

$$A = \frac{1}{2}(b_1 + b_2) \times h \quad \text{or} \quad A = \frac{(b_1+b_2)\times h}{2}$$

## *What I Can Do*

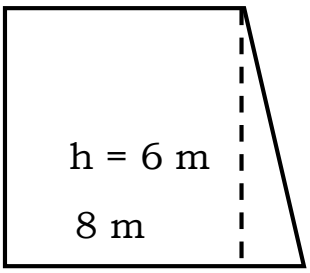
Find the area of each trapezoid using the formula.

1.



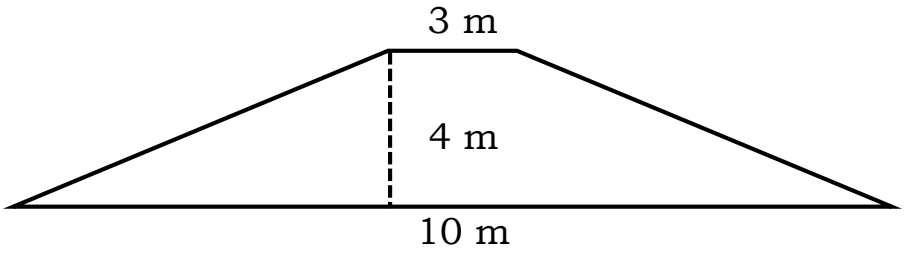

A = _____ $m^2$

2.




A = _____ $m^2$

3.



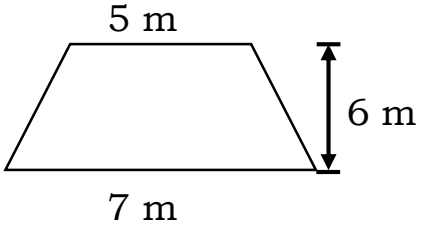

A = _____$m^2$

Are you done answering?
If yes, time to check. Please go to page 36 for the ***Answer Key***.

## *Assessment*

A. Multiple Choice. Choose the letter of the correct answer.

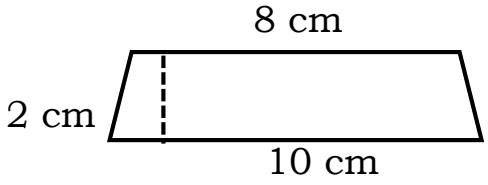
1. Find the area of a trapezoid whose bases are 5 m and 7 m and with a height of 6 m.



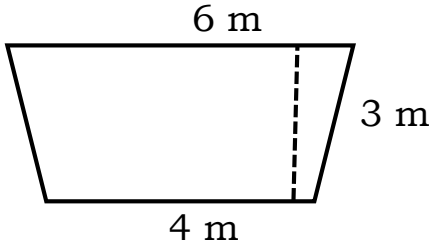

A. 36 $m^2$ B. 35 $m^2$ C. 34 $m^2$ D. 33 $m^2$

2. The bases of a trapezoid are 8 cm and 10 cm. Its height is 2 cm. What is the area of the trapezoid?

A. 18 $cm^2$ B. 30 $cm^2$
C. 45 $cm^2$ D. 50 $cm^2$




3. The bases of a trapezoid are 6 m and 4 m. Its height is 3 m. What is the area of the trapezoid?




A. 10 $m^2$ B. 15 $m^2$
C. 16$m^2$ D. 17 $m^2$

4. The height of a trapezoid is 9 cm. Its bases are 10 cm and 12 cm. What is the area of the trapezoid?

A. 88 $cm^2$ B. 99 $cm^2$ C. 100 $cm^2$ D. 102 $cm^2$

5. What is the area of a trapezoid whose bases are 13 m and 16 m, and whose height is 4 m?

A. 56 $m^2$ B. 58 $m^2$ C. 60 $m^2$ D. 62 $m^2$

B. Find the area of each trapezoid with the given dimensions.

6. $b_1$ = 4 cm
   $b_2$ = 9 cm
   h = 6 cm
   A = _____ sq. cm

7. $b_1$ = 7 m
   $b_2$ = 8 m
   h = 4 m
   A = _____ sq. m

8. $b_1$ = 14 cm
   $b_2$ = 20 cm
   h = 5 cm
   A = _____ sq. cm

9. $b_1$ = 8 m
   $b_2$ = 18 m
   h = 10 m
   A = _____sq. m

10. $b_1$ = 15 cm
    $b_2$ = 22 cm
    h = 8 cm
    A = _____ sq. cm

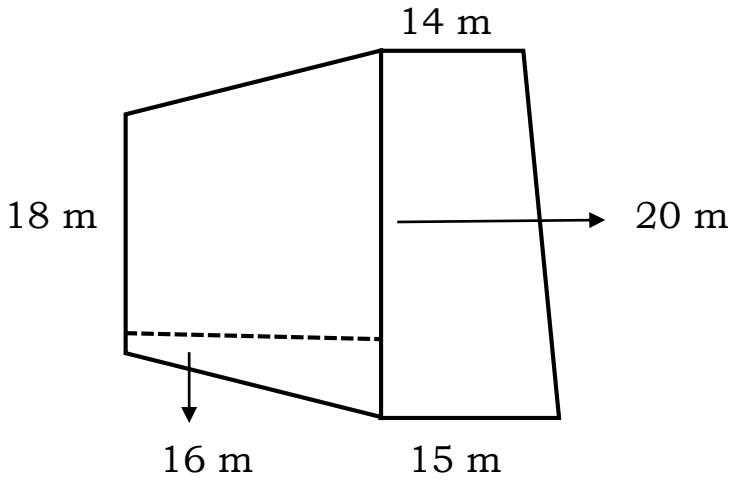
Are you done answering?
If yes, time to check. Please go to page 36 for the ***Answer Key***.

Got a score of 8 -10? EXCELLENT! You already understood the lesson. You are now ready for the next module.

If your score is below 8, kindly study again the lesson and the activities.

## *Additional Activities*

Consider the figure formed by two adjoining trapezoidal residential lots. Find the area of each lot and the total area of the two lots using the formula.




Lot 1: bases ⟶ 18 m and 20 m ; h = 16 m

Lot 2: bases ⟶ 14 m and 15 m ; h = 20 m

Are you done answering?
If yes, time to check. Please go to page 36 for the ***Answer Key***.

# Answer Key

## LESSON 1

### What I Know

1. e
2. k
3. d
4. a
5. c
6. f
7. h
8. i
9. g
10. j

### What's In

1. TRUE
2. FALSE
3. TRUE
4. TRUE
5. TRUE

### What's More

| Parallelogram | Base | Height | Area |
|---|---|---|---|
| A | 7 cm | 2 cm | 14 $cm^2$ |
| B | 9 cm | 4 cm | 36 $cm^2$ |
| C | 7 cm | 6 cm | 42 $cm^2$ |
| D | 11 cm | 3 cm | 33 $cm^2$ |
| E | 10 cm | 5 cm | 50 $cm^2$ |

### What I Can Do

1. 40 $m^2$
2. 65 $cm^2$
3. 90 $m^2$
4. 42 $cm^2$
5. 66 $m^2$

### Assessment

1. C
2. C
3. B
4. 126 $m^2$
5. 99 $cm^2$
6. 52 $m^2$
7. 56 $cm^2$
8. 60 $m^2$
9. 120 $cm^2$
10. 198 $m^2$

### Additional Activities

The base = 6 cm
Height = 10 cm
Area = 60 $cm^2$

## LESSON 2

**What I Know**

1. 12 $m^2$
2. 30 $cm^2$
3. 36 $m^2$
4. 40 $cm^2$
5. 54 $m^2$
6. 24 $m^2$
7. 100 $cm^2$
8. 60 $cm^2$
9. 42 $m^2$
10. 120 $cm^2$

**What's In**

1. 20
2. 15
3. 21
4. 27
5. 12

**What's More**

3. $A = \frac{b \times h}{2}$
$= \frac{4\text{ m} \times 14\text{ m}}{2}$
$= \frac{60\text{ sq.m}}{2}$
$A = 30\text{ sq. m}$

2. $A = \frac{b \times h}{2}$
$= \frac{12\text{ m} \times 8\text{ m}}{2}$
$= \frac{96\text{ sq.m}}{2}$
$A = 48\text{ sq. m}$

1. $A = \frac{b \times h}{2}$
$= \frac{20\text{ cm} \times 14\text{ cm}}{2}$
$= \frac{280\text{ sq. cm}}{2}$
$A = 140\text{ sq. cm}$

**What I Can Do**

1. 40 $m^2$
2. 27 $cm^2$
3. 35 $m^2$

**Assessment**

1. B
2. C
3. A
4. B
5. B
6. 108 $cm^2$
7. 120 $cm^2$
8. 90 $m^2$
9. 84 $m^2$
10. 234 $cm^2$

**Additional Activities**

Areas:

piece a (Right triangle)
= 42 $m^2$

piece b (Right triangle)
= 42 $m^2$

piece c (Isosceles triangle) = 84 $m^2$

c. The area of the right triangle is half the area of the isosceles triangle.

## LESSON 3

**What I Know**

1. 27 $m^2$
2. 36 $cm^2$
3. 60 $m^2$
4. 84 $cm^2$
5. 40 $m^2$
6. 35 $cm^2$
7. 24 $m^2$
8. 51 $cm^2$
9. 92 $m^2$
10. 81 $cm^2$

**What's In**

1. c
2. b
3. f
4. a
5. d

**What's More**

| Trapezoid | $b_1$ | $b_2$ | h | Area (A) |
|---|---|---|---|---|
| A | 2 cm | **4 cm** | 5 cm | **15 $cm^2$** |
| B | 7 cm | 3 cm | **5 cm** | **25 $cm^2$** |
| C | **6 cm** | 8 cm | 4 cm | **28 $cm^2$** |
| D | 8 cm | **12 cm** | 2cm | ***20 $cm^2$*** |
| E | 9 cm | 5 cm | ***3 cm*** | **21$cm^2$** |

**What I Can Do**

1. 28 $m^2$
2. 42 $m^2$
3. 26 $m^2$

**Assessment**

1. A
2. A
3. B
4. B
5. B
6. 39 sq cm
7. 30 sq m
8. 85 sq cm
9. 130 sq m
10. 148 sq cm

**Additional Activities**

Lot 1 = 304 $m^2$
Lot 2 = 290 $m^2$
Total Area of two lots = 594 $m^2$

# *References*

K to 12 Mathematics Curriculum Guide, August 2016

Tabilang, A., Arce, I., Pascua, R., Calayag, N., Dacubo,L.., Borais, D., Buemia, R., Collao, M., Morandante, L., Danao, A., Gonzaga, L., Briones, I., Daganta, J. 2015. **Mathematics 4 Learner's Material**. Department of Education.

Tabilang, A., Arce, I., Pascua, R., Calayag, N., Dacubo,L.., Borais, D., Buemia, R., Collao, M., Morandante, L., Danao, A., Gonzaga, L., Briones, I., Daganta, J. 2015. **Mathematics 4 Teacher's Guide**. Department of Education

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