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Mathematics

Quarter 3 – Module 2: Using Properties to Find the Measures of Angles, Sides and Other Quantities Involving Parallelograms

ALTERNATIVE DELIVERY MODE
ADM

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Alternative Delivery Mode
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Mathematics

Quarter 3 – Module 2: Using Properties to Find the Measures of Angles, Sides and Other Quantities Involving Parallelograms

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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

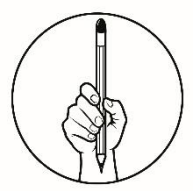
This module was designed and written with you in mind. It is here to help you master the **Using Properties to Find the Measures of Angles, Sides and Other Quantities Involving Parallelograms.** The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

The module is comprised only of one lesson:

- Using Properties to Find the Measures of Angles, Sides and Other Quantities Involving Parallelograms

After going through this module, you are expected to:

- use properties to find measures of angles, sides and other quantities involving parallelograms. (**M9GE – IIIa-b – 31.2)**



What I Know

Assess yourself. Find out how much you already know about the module. Answer all the given items. After taking and checking this short test, take note of the items that you were not able to answer correctly and look for the right answer as you go through this module.

Read and answer each question carefully and write the letter of the correct answer on your answer sheet.

Use the parallelogram below to answer the questions 1 - 5.

1. Which of the following pairs of sides are congruent?
   a. $\overline{BA}$ and $\overline{AR}$ c. $\overline{AR}$ and $\overline{BE}$
   b. $\overline{BR}$ and $\overline{EA}$ d. $\overline{EB}$ and $\overline{BA}$

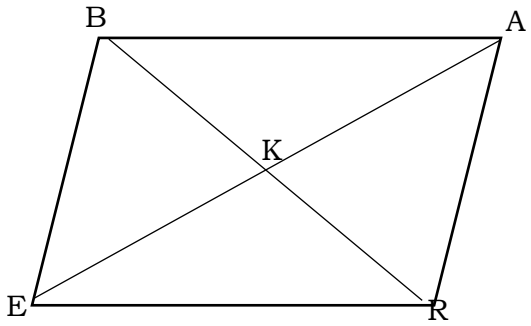
2. Find the value of x if |BA| = 2x and |ER| = 100 cm.
   a. 100 cm c. 25 cm
   b. 50cm d. 20 cm

3. If |BE| = (5y + 25) cm and |AR| = 75 cm, find the value of y.
   a. 75 c. 25
   b. 50 d. 10

4. ∠B and ∠E are consecutive angles. Write the equation that describes the relationship between ∠B and ∠E.
   a. m∠B + m∠E = 90° c. m∠B + m∠E = 180°
   b. m∠B = m∠E d. m∠B + m∠E = 60°

5. If m∠B is twice the m∠A, what is the m∠E?
   a. 30° c. 90°
   b. 60° d. 120°

Use the parallelogram below to answer the questions 6 - 10.



6. Name the diagonals.
   a. $\overline{BK}$ and $\overline{EA}$
   b. $\overline{BR}$ and $\overline{EA}$
   c. $\overline{BR}$ and $\overline{AK}$
   d. $\overline{ER}$ and $\overline{BA}$

7. Find |BR| if the measure of $\overline{BK}$ is 30 cm.
   a. 10 cm
   b. 15 cm
   c. 30 cm
   d. 60 cm

8. What is the measure of $\overline{EK}$ if |EA| = 46 m?
   a. 13 m
   b. 23 m
   c. 40 m
   d. 46 m

9. Which of the following statements is true?
   a. |BK| = 2|KR|
   b. |BR|= ½ |BK|
   c. |EA| = 2|AK|
   d. |EA| = ½ |AK|

10. If |EK| = 4x + 12 cm, |KA|= 2x + 40 cm, what is the value of x?
   a. 28
   b. 14
   c. 12
   d. 7

Lesson 1

Using Properties to Find Measures of Angles, Sides and Other Quantities Involving Parallelograms

In the previous topic, you already learned about the conditions that make a quadrilateral a parallelogram. This time let us have a deeper understanding of the application of those theorems and properties. You will learn in this module to find measures of angles, sides and other quantities involving parallelograms.

What's In

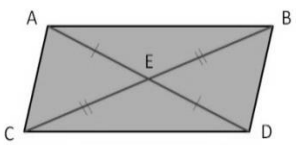
Let's have a recall on the basic ideas on parallelogram. Remember that a quadrilateral is said to be parallelogram if

a) opposite sides are congruent,
b) opposite sides are parallel,
c) the diagonals bisect each other,
d) the opposite angles are congruent, and
e) consecutive angles are supplementary.

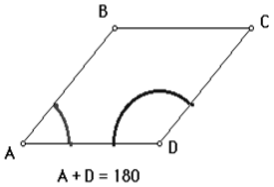
Try This!

Use the markings to identify if the given quadrilaterals below are parallelogram or not. Write Yes or No. If yes, justify your answer. Use your answer sheet.

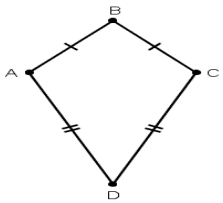
1) _____



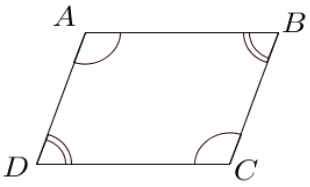
2) _____



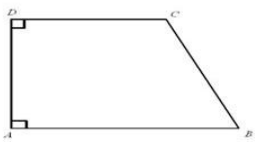
3) _____



4) _____



5) _____



What's New

You have studied the properties of parallelogram. This time let's use these properties to find the measures of the angles, sides and other quantities involving parallelogram.

The Gift

Today is Zoey's 18th birthday. There is a small celebration in their humble home. In the middle of the party, someone handed her a piece of paper. To her surprise, it is a letter from her Lolo Toni, and the letter says…

To my ever-beautiful Zoey,

I am very happy to see you grow and transform into a very charming and independent woman. Since you are already of legal age, I want to give you the resort where your Lola and I built memories for almost 50 years. Please treasure it with all your heart and build a family of your own there soon.

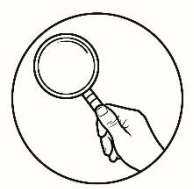
Love,

Lolo Toni

She remembered that the resort is unique since its shape is a parallelogram. Its perimeter is 120 m and one side is twice as long as its consecutive side.

- What is the equation representing the perimeter of Zoey's newly – owned resort?
- What are the measures of the sides of the resort?

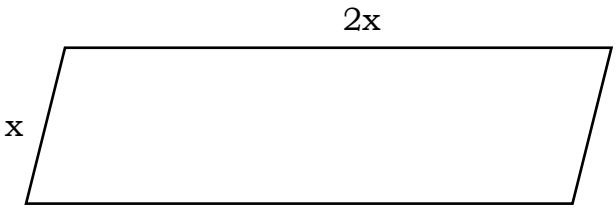
Zoey is so fortunate to be given a gift that is so precious as in the story. To take care and maintain the resort to make it more productive would surely make Lolo Toni very happy.



What is It

Let's investigate the situation given above.

If one side of the resort is twice as long as its consecutive side, then we can represent the measures of the sides as shown in the figure:



Perimeter = 120m

The perimeter (P) of the parallelogram can be solved by adding the measures of all its sides. Since the opposite sides of a parallelogram are congruent, then the perimeter can be expressed as:

$P = 2(x) + 2(2x)$	Perimeter of Zoey's resort
$120 = 2x + 4x$	*by substitution and simplification*
$120 = 6x$	
$20 = x$	*by Division Property of Equality*

One side of the resort measures 20 m and the consecutive side measures 2(20m) or equal to 40m.

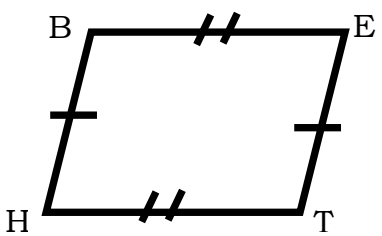
Thus, the sides of the resort measure 20m, 40m, 20m, and 40m.

Now, let's study further the properties of a parallelogram and use them to solve problems.

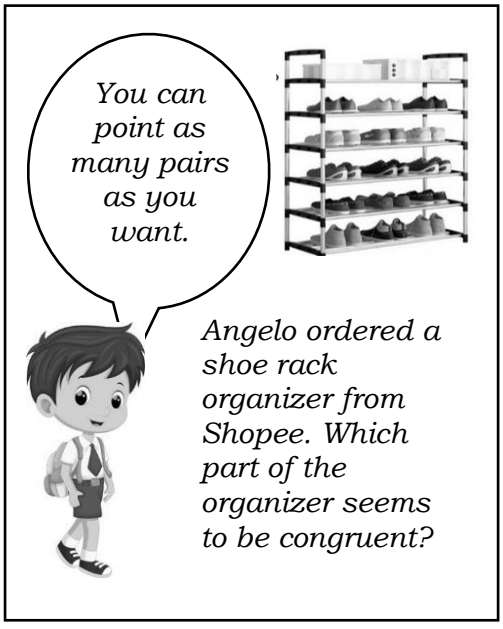
A quadrilateral is a parallelogram if opposite sides are congruent and parallel.

Given that □BETH is a parallelogram, We can say that,

$\overline{BE} \cong \overline{HT}$, $\overline{BE} \parallel \overline{HT}$
$\overline{BH} \cong \overline{ET}$, $\overline{BH} \parallel \overline{ET}$

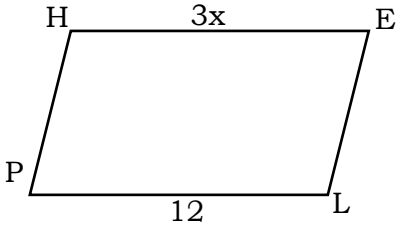


Getting Ready!



Example 1. □HELP is a parallelogram. If |*HE*| = 3x and |PL| = 12 cm, find the value of x.

Solution:



Step 1. Draw the given.

Step 2. Identify relationships. Identify the opposite sides.

$\overline{HE} \cong \overline{PL}$
$\overline{HP} \cong \overline{EL}$

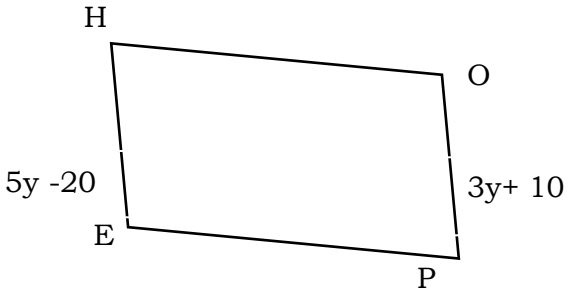
Step 3. Formulate the equation and solve.

|HE| = |PL|
3x = 12
x = 4

Step 4. Answer the question in the problem.
The value of x is 4.

Example 2. Given is parallelogram HOPE. Find the value of y and the lengths of the given sides.

Solution:



Step 1. Draw the parallelogram and label the sides with the given measures.

Step 2. Identify the relationships of the given.

Given are opposite sides and opposite sides are congruent.

$\overline{HE} \cong \overline{OP}$
|HE|=|OP|

Step 3. Formulate and solve the equation.

5y –20 = 3y + 10
5y – 3y = 10 +20
2y = 30
y = 15

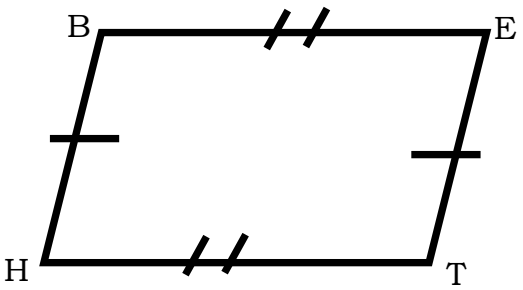
Step 4. Answer the question in the problem.

The value of y is 15.
To solve for the sides:
5y -20 = 5(15)-20
= 75 - 20
= 55
or

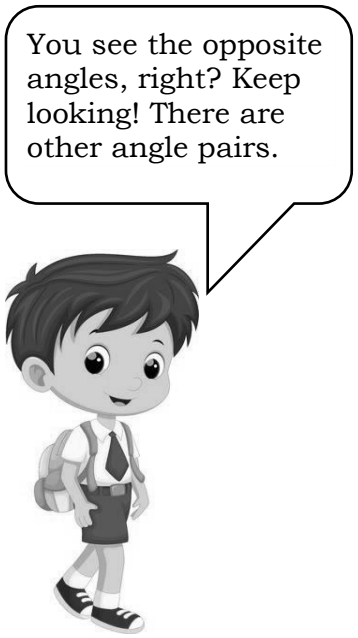
3y +10 = 3(15)+ 10
= 45 + 10
= 55

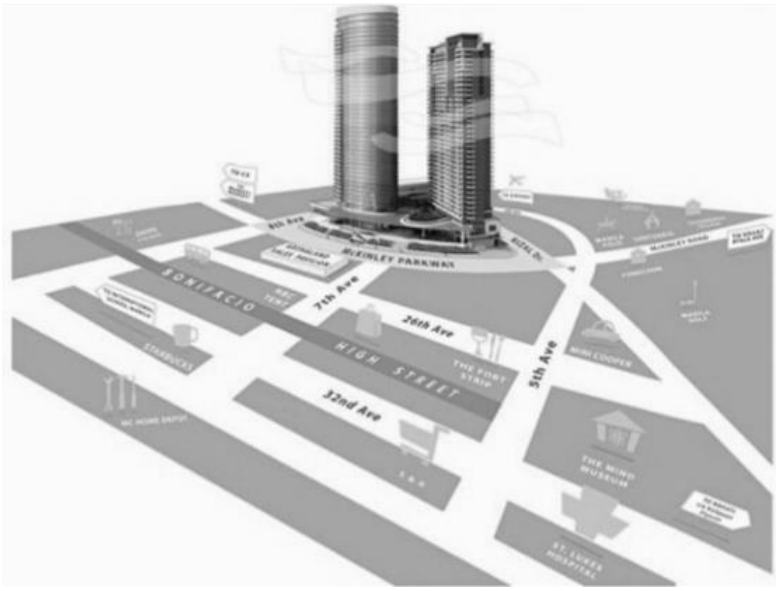
Each of the given sides measures 55 units.

A quadrilateral is a parallelogram if:
a) Opposite angles are congruent; and
b) Consecutive angles are supplementary.



Look at the map of Arya Residences. 32nd and 26th avenues are parallel. 5th and 7th avenues are also parallel. Which angle pairs do you think are congruent? Which angle pairs are supplementary?





Suppose □BETH is a parallelogram, then

- The consecutive angles are:
  1) ∠B and ∠E
  2) ∠E and ∠T
  3) ∠T and ∠H
  4) ∠H and ∠B

  Any pair of consecutive angles are supplementary. The sum of their measures is 180°

- The opposite angles are:
  1) ∠B and ∠T
  2) ∠H and ∠E

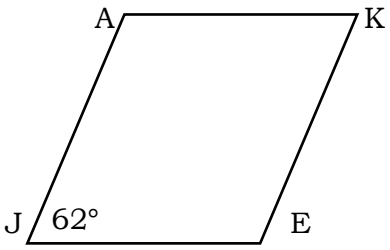
  Each pair of opposite angles are always congruent.

Example 1.

□JAKE is a parallelogram. If m∠J = 62°, find the measures of the other 3 angles.

Solution:

Step 1. Draw and mark the given.



Step 2. Identify the relationship of each angle to angle J.

∠K is opposite of ∠J ➔ **m∠K = m∠J = 62⁰**

∠E is consecutive to ∠J ➔ m∠E + m∠J = 180°

m∠E + 62° = 180°

m∠E = 180° – 62° = 118⁰

∠A is consecutive to ∠J ➔ m∠A + m∠J = 180°

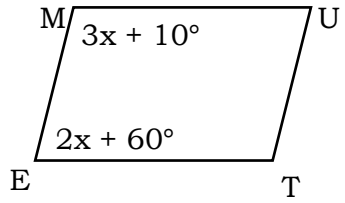
m∠A + 62° = 180°

m∠A = 180° – 62° = 118⁰

Example 2. Quadrilateral MUTE is a parallelogram. Find the value of x when $m\angle M = 3x + 10°$ and $m\angle E = 2x + 60°$

Solution:

Step 1. Draw the given figure.



Step 2. Identify the relationship of the given.

- $\angle M$ and $\angle E$ are consecutive, so they must be supplementary.

$m\angle M$ + m$\angle E$ = 180°

Step 3. Formulate an equation then solve.

3x + 10° + 2x + 60° = 180°
5x + 70° = 180°
5x = 180° – 70°
5x = 110°
x = 22°

Example 3. □STAR is a parallelogram. If m∠T = x, m∠R = 88^0, m∠AST = 32^0 and m∠RAS = 2y, find the values of **x, y, z,** and m∠TAS.

Solution:

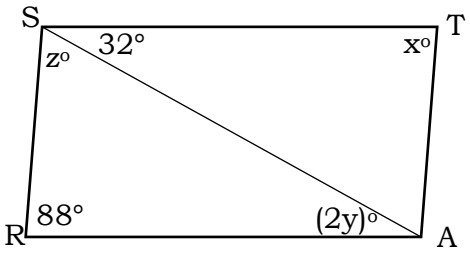
a) ∠T and ∠R are opposite angles, therefore

m∠T = x = m∠R
x = 88°

b) ∠R and ∠S are supplementary:

m∠R + m∠S = 180^0, and
m∠S = m∠RSA + m∠AST

m∠R + m∠RSA + m∠AST = 180^0
88° + z + 32° = 180^0
z +120° =180^0
z =180^0 - 120°
z = 60°



c) ∠RAS and ∠AST are alternate interior angles, therefore they are congruent.

m∠RAS = m∠AST
2y = 32°
y =16°

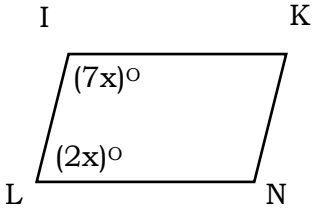
d) ∠RSA and ∠TAS are alternate interior angles, therefore they are congruent.

m∠RSA = m∠TAS
z = m∠TAS
60° = m∠TAS

Example 4. The measures of angles L and I of parallelogram LINK are in the ratio of 2:7. Find the measure of each angle.

Solution:

Step 1. Draw the given.



Step 2. Identify the relationship of the given.

Since ∠L and ∠I are consecutive angles, then they are supplementary.

$m\angle L + m\angle I = 180°$

Let x be the common factor of each angle.

$m\angle L = 2x$

$m\angle I = 7x$

Step 3. Formulate the equation and solve.

So we have,

$m\angle L + m\angle I = 180°$

$2x + 7x = 180°$

$9x = 180°$

$x = 20°$

Step 4. Answer the question in the problem.

$m\angle L = 2x$ $\qquad$ $m\angle I = 7x$

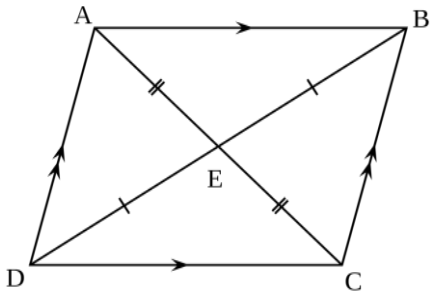
$= 2(20°)$ $\qquad$ $= 7(20°)$

$= 40^0$ $\qquad$ $= 140^0$

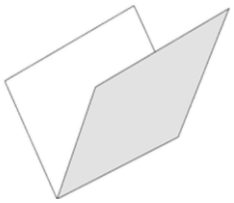
Thus, the measure of angle L is 40^0 and the measure of angle I is 140^0.

A quadrilateral is a parallelogram if the diagonals bisect each other.

Suppose we have parallelogram ABCD, and the diagonals $\overline{AC}$ and $\overline{BD}$ intersect at point E then:



Fold a piece of paper in half. Fold it in half again. Draw a diagonal from one vertex to the other. Cut through the folded paper along the diagonal. Unfold the paper. What have you noticed about the sides and the diagonals of the figure you formed?



Notice that the starting and ending figures are both parallelogram.

- Diagonal $\overline{AC}$ is cut into two congruent segments namely: $\overline{AE}$ and $\overline{CE}$. Thus

$|AE| = ½|AC|$ and $|CE| = ½|AC|$

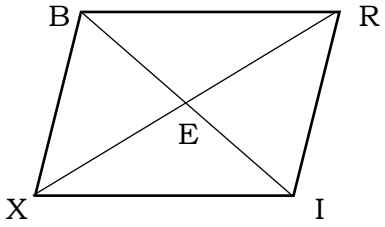
- Diagonal $\overline{BD}$ is cut into two congruent segments namely: $\overline{DE}$ and $\overline{EB}$. Thus

$|DE| = ½|BD|$ and $|BE| = ½|BD|$

Example 1. □BRIX is a parallelogram. Its diagonals bisect each other at point E. If |BE| = 65 dm, find |BI| and |EI|.

Solution:

Step 1. Draw and mark the given.



Step 2. Identify the relationship between what is asked and the given.

|BE| = ½ |BI|
|BE| = |EI|

Step 3. Formulate the equation and solve.

|BE| = ½|BI|
65 dm = ½|BI|
2(65 dm) = |BI|
130 dm = |BI|

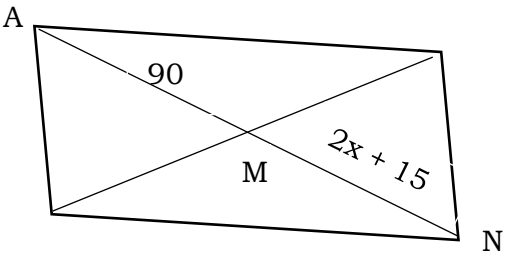
|BE| = |EI|
65 dm = |EI|

Step 4. Answer the question in the problem.

So, |BI| is 130 dm and |EI| is 65 dm.

Example 2. The figure below is a parallelogram. Find the value of x.

Solution:



Step 1. Identify the relationship of the given.

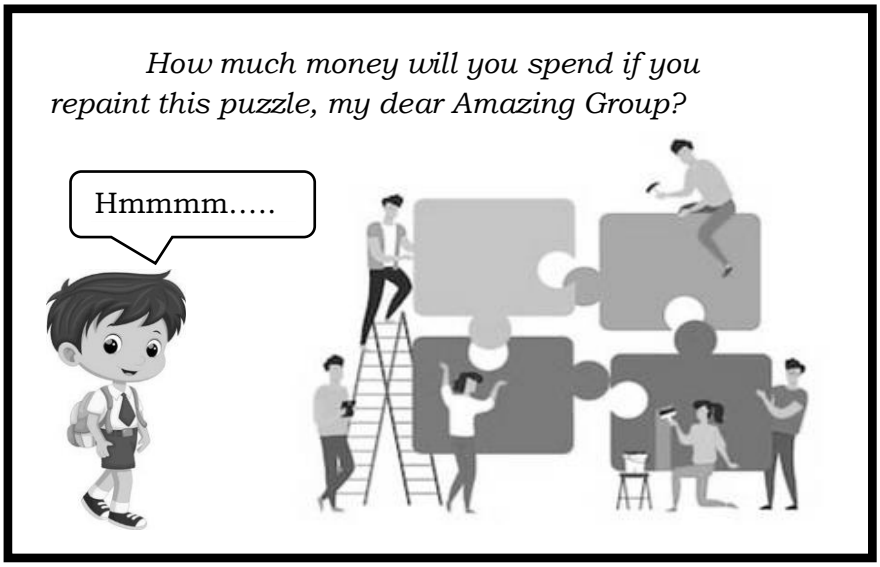
- $\overline{MA}$ and $\overline{MN}$ are congruent.

Step 2. Formulate an equation and solve.

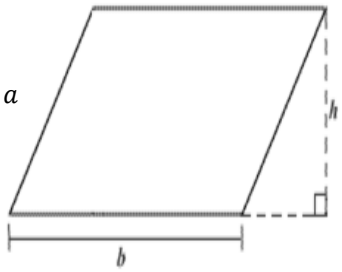
2x +15 = 90
2x = 90 -15
2x = 75
x = 37.5

The total surface (or the region) occupied by a closed figure is called as **area**, A.

The **perimeter**, **P**, of a parallelogram is the sum of the lengths of its four sides.



The **area** (A) of a parallelogram is given by the formula $A = bh$ where b is the length of the base and h is the height.

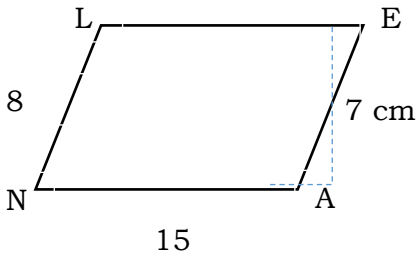


The **perimeter** of a parallelogram is the sum of the lengths of its four sides. It is given by the formula $P = 2a + 2b$ *where a and b are consecutive sides of the parallelogram.*

Example 1. Find the area of the parallelogram LEAN below.

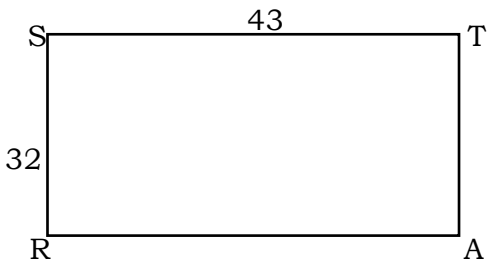
Given: Height (h) = 7 cm
Base (b) = 15 cm

Solution:
Use the formulas
Area $= b \cdot h$
A = (15)(7)
A = 105 sq units



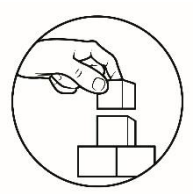
Therefore, the area of the parallelogram is 105 sq units.

Example 2. □STAR is a parallelogram. If |SR| and |ST| are 32 cm and 43 cm respectively, find its perimeter.



Solution:
Use the formula for the perimeter.

Perimeter = $2|ST| + 2|SR|$
P = 2(43) +2(32)
= 86 + 64
P = 150 cm

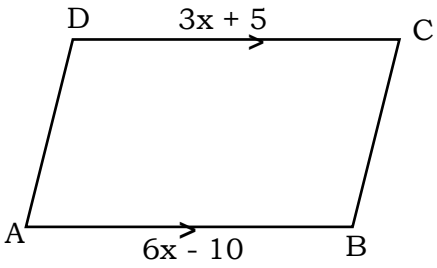


What's More

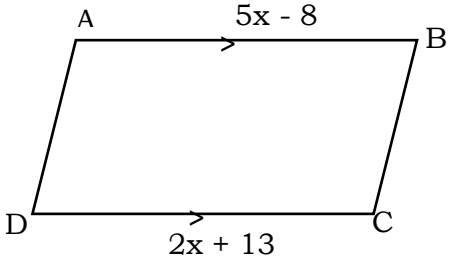
Test Yourself!

A. Each of the following quadrilaterals below is a parallelogram. Find the value/s of the variable/s in each item. Write it on your answer sheet.

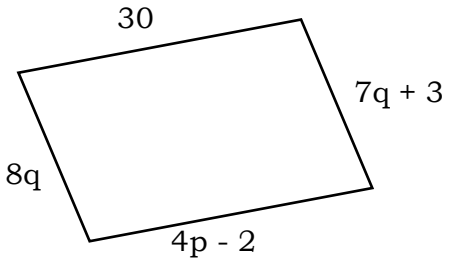
1) x = _____



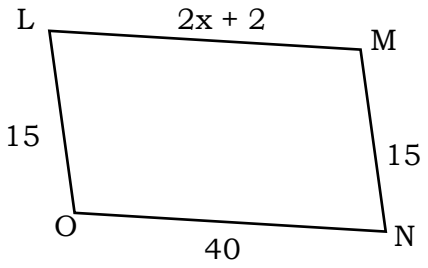
2) x = _____



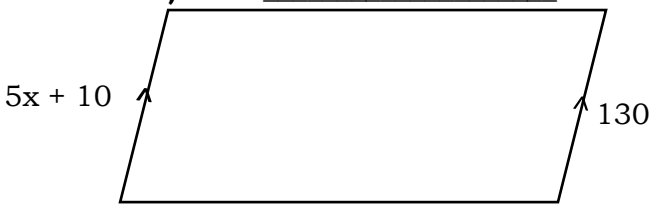
3) p = _____; q = _____



4) x = _____



5) x = _____



B. 1. Find the measures of the other three angles of a parallelogram if one angle measures:

a) 60°
b) 68°
c) 73 °
d) 101°
e) 138°
f) 160°

2. In parallelogram ABCD, m∠A = x degrees and ∠B measures 2x – 30°. Find the measure of ∠A.

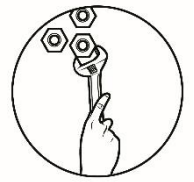
3. In parallelogram ABCD, the measure of ∠A exceeds the measure of ∠B by 30°. Find the measure of ∠B.

What I Have Learned

A **parallelogram** is a quadrilateral in which both pairs of opposite sides are parallel.

PROPERTIES OF A PARALLELOGRAM

1. Opposite sides are congruent and parallel.
2. Opposite angles are congruent.
3. Consecutive angles are supplementary.
4. Diagonals bisect each other.

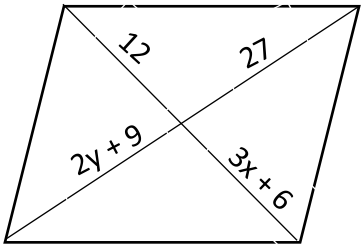


What I Can Do

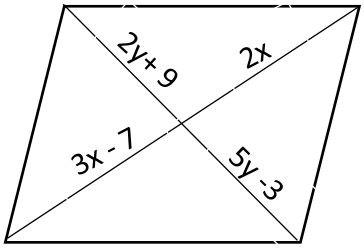
Direction: Write your answers on your answer sheet.

I. Find the value of the variable that will make each quadrilateral a parallelogram.

1. ***x*** **=**_____
y**=** _____



2. ***x*** **=**_____
y**=** _____



II. Solve the following.

a. Find the perimeter of the parallelogram given the measures of its consecutive sides a and b.

1. a = 12 cm	b = 4 cm
2. a = 23 m	b = 11 m
3. a = 31 dm	b = 15 dm

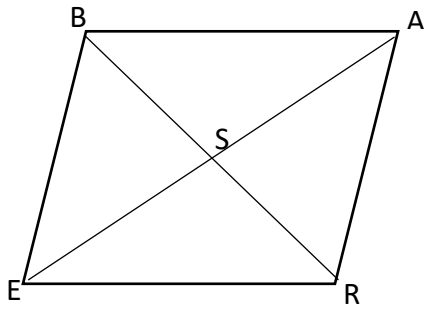
b. Find the area of the parallelogram given its base and height.

1. b= 23 cm	h = 21 cm
2. b= 13 dm	h = 11 dm
3. b= 45 mm	h = 25 mm

Assessment

Answer each of the following items accurately and write the letter of the correct answer on your answer sheet.

Use the parallelogram at the right to answer the questions below.



1) Which of the following pairs of angles are supplementary?
   a. ∠EBA and ∠BER
   b. ∠EBA and ∠ERA
   c. ∠REB and ∠BAR
   d. all of the above

2) Find the value of x if m∠ABE = 5x and m∠ARE = 100°.
   a. 100° b. 50° c. 20° d. 10°

3) What is the measure of ∠ABE in item no. 2?
   a. 40° b. 50° c. 80° d. 100°

4) If m∠REB = 4x and m∠ARE = 5x, what is the value of x?
   a. 10° b. 20° c. 90° d. 30°

5) What is the measure of ∠ARE in item no 4?
   a. 40° b.50° c. 80° d. 100°

6) Which of the following statements is true?
   a. $\overline{BR} \cong \overline{EA}$ b. $\overline{BS} \cong \overline{BR}$ c. $\overline{ES} \cong \overline{SA}$ d. all of the above

7) If |ES| = 40 cm, what is the measure of $\overline{EA}$?
   a. 20 cm b. 40cm c. 50 cm d. 80 cm

8) What is the measure of $\overline{BS}$ if $\overline{BR}$ measures 70 cm?
   a. 35 cm b.70 cm c. 105 cm d. 140 cm

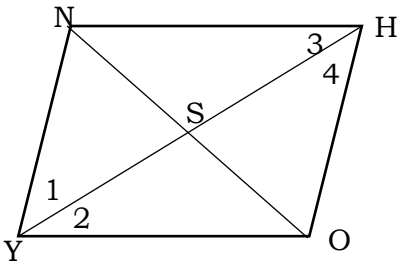
9) If |ES| = 6x + 40 cm and |SA| = 3x + 52 cm, what is the value of x?
   a. 4 b. 3 c. 5 d. 10

10) What is the measure $\overline{EA}$ in no. 9?
   a. 32 cm b.24 cm c. 64 cm d. 128 cm

Additional Activities

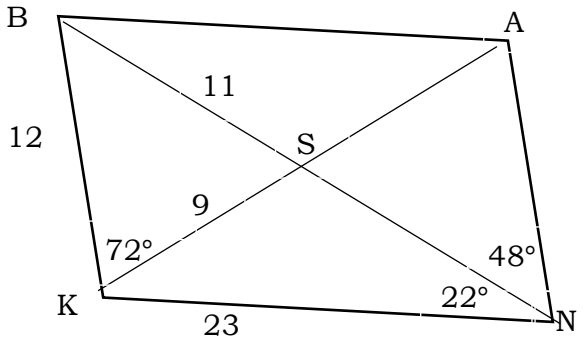
Practice Your Brain!!

I. Complete each statement using parallelogram NHOY.



1) If |NY| = 25cm, then |HO| = _____.
2) If |NH| = 34 cm, then |YO| = _____.
3) If |NO| = 46 cm, then |NS| = _____.
4) If |SH| = 24 cm, then |YH| = _____.
5) If m∠YNH = 100° , then m∠HOY = _____.
6) If m∠YNH = 100°, then m∠NHO =_____.
7) If m∠1 = 47°, then m∠4 = _____.
8) If |YH| = 2x + 12, then |YS| = _____.
9) If |NH| = x + 30 and |YO| = 2x + 12, then x = _____.
10) If |NY| = 3x +10 and |HO| = 40, then x = _____.

II. Complete each statement using parallelogram BANK.



1) |AN| = _____
2) |BA| = _____
3) |SN| = _____
4) |KA| = _____
5) |BN| = _____
6) m∠AKN = _____
7) m∠KBA= _____
8) m∠BAN = _____
9) Perimeter of □BANK = _____
10) m∠KBN = _____

PROBLEM – BASED LEARNING WORKSHEET

The New Beginning

Masangkay family was to have a simple life. A life that is far from the noise of the city. So, the family agreed to settle in their 500 square meter lot in the middle of the forest. The lot there is unique since it is parallelogram in shape. They decided to maximize the lot by building a landmark (a house, a poultry, a piggery, and a man–made well) in each of its boundary. They build a simple house opposite to piggery and beside the poultry, respectively. They even put a man-made well (opposite to poultry) to sustain their need of water.

Let's Analyze!

Direction: Write your answers on your answer sheet.

1) Illustrate the situation. Use capital letter to name each landmark.

2) If one side is 5 m longer than the other side, how will you represent the longer side if the shorter side is represented by w?

_____
_____
_____

3) If the distance of the house from the poultry and man – made well are 25 m and 20 m respectively, what is the distance between:

   a) the poultry and the piggery? _____
   b) the piggery and the man – made well? _____

4) What is the perimeter of the lot given the dimensions above?

_____
_____
_____

References

Jose- Dilao, S. and Bernabe, J. (2009). *Geometry Textbook for Third Year*. Revised Edition 3. pp. 118 – 133. Quezon City, Philippines. SD, Publications, Inc

E-SEARCH

To further explore on how to get the measure of sides and angles of a parallelogram and if it possible to connect the internet, you may visit the following links:

https://www.mathplanet.com/education/geometry/quadrilaterals/properties-of-parallelograms

https://www.mathwarehouse.com/geometry/quadrilaterals/parallelograms/

https://mathbitsnotebook.com/Geometry/Quadrilaterals/QDproperties.html

https://mathbitsnotebook.com/Geometry/Quadrilaterals/QDtransquads.html

https://mathbitsnotebook.com/Geometry/Quadrilaterals/QDSamples.html

https://studyres.com/doc/3358141/3-2-lesson-quiz-3-2-solve-it-

https://www.google.com/search?q=diagonals+bisect+each+other+examples+with+value&tbm=isch&ved=2ahUKEwic6cfIka3pAhUjQDABHSjtBo0Q2-cCegQIABAA&oq=diagonals+bisect+each+other+examples+with+value&gs_lcp=CgNpbWcQAzoCCABQsY6MAViJrYwBYPKwjAFoAHAAeACAAZoDiAGRNpIBBjMtMTguMpgBAKABAaoBC2d3cy13aXotaW1n&sclient=img&ei=_va5XpzyEqOAwbkPqNqb6Ag#imgrc=Ftf4fnqa-YhsuM

https://studylib.net/doc/8272035/6-4-lesson-quiz-6-4-solve-it-

https://www.khanacademy.org/math/basic-geo/basic-geo-area-and-perimeter/parallelogram-area/v/intuition-for-area-of-a-parallelogram

https://www.varsitytutors.com/hotmath/hotmath_help/topics/parallelogram

https://www.onlinemathlearning.com/area-of-parallelogram.html

https://www.khanacademy.org/math/basic-geo/basic-geo-area-and-perimeter/parallelogram-area/v/intuition-for-area-of-a-parallelogram

https://www.campbell.k12.ky.us/userfiles/1053/Classes/8232/Geometry%20Parallelogram%20worksheet.pdf

Answer Key

ADDITIONAL EXERCISES

I		II	
1.	25	1.	12
2.	34	2.	23
3.	23	3.	11
4.	48	4.	18
5.	100	5.	22
6.	80	6.	38
7.	47	7.	70
8.	x + 6	8.	110
9.	18	9.	70
10.	10	10.	48

PROBLEM-BASED LEARNING WORKSHEET

1) House — Poultry

Man-made — Piggery

well

2) w + 5

3) a. 20 b. 25

4) 90 meters

WHAT I KNOW

6)	C	11)	B
7)	B	12)	D
8)	D	13)	B
9)	C	14)	C
10)	B	15)	B

WHAT'S IN

1) Yes, diagonals bisect each other.
2) No
3) No
4) Yes, opposite angles are congruent.
5) No

WHAT'S MORE

A. 1) x=5
2) x=7
3) p=8; q=3
4) 19
5) 24

B. 1. a) 60°, 120°,120°
b) 68°, 112°,112°
c) 73°, 107°,1070°
d) 101°, 79°,79°
e) 138°, 42°,42°
f) 160°, 20°, 20°

2. ∠A = 70°

3. ∠B = 75°

WHAT I CAN DO

I.

1) x=2; y=9
2) x=7; y=4

II. a. 1) 32 cm
2) 68 m
3) 92 dm

b.

1) 483 sq cm
2) 143 sq dm
3) 1125 sq mm

ASSESSMENT

1.	A
2.	C
3.	D
4.	B
5.	D
6.	C
7.	D
8.	A
9.	A
10.	D

For inquiries or feedback, please write or call:

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