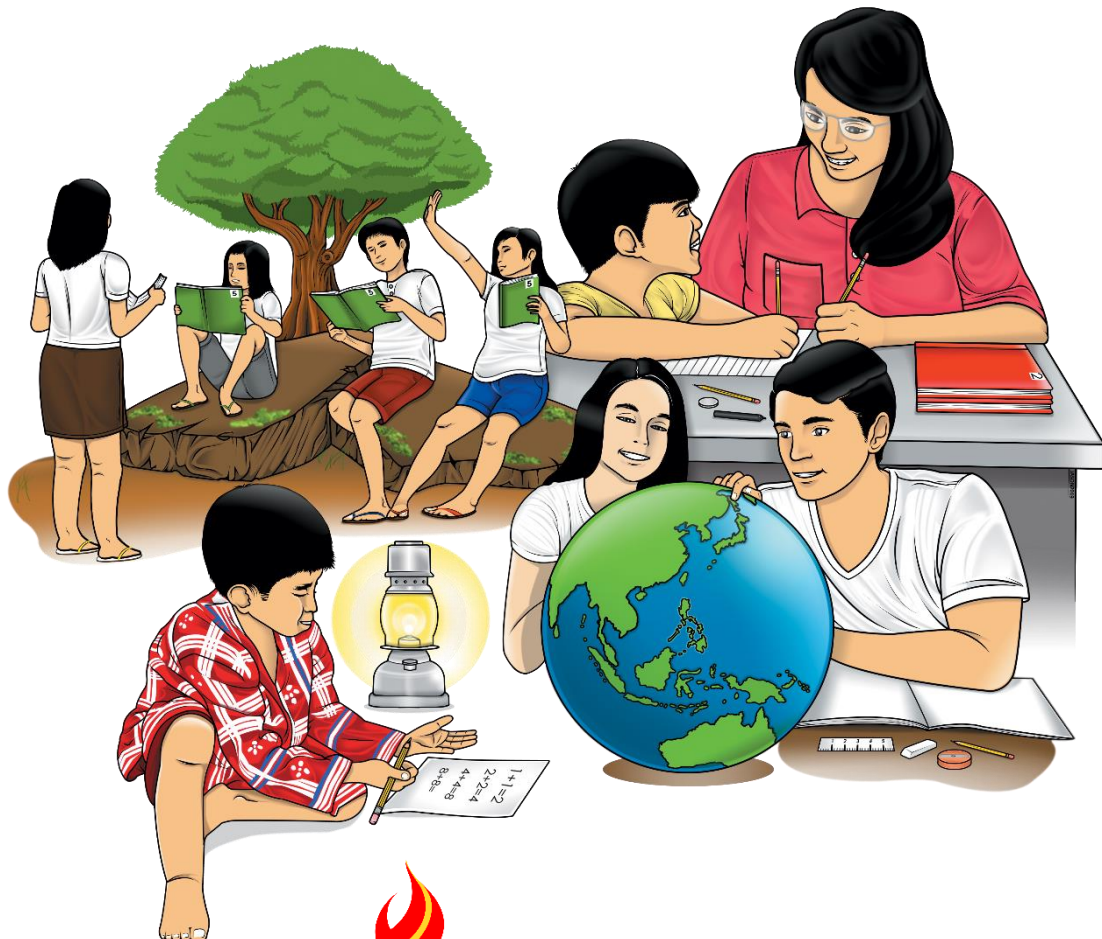




MATHEMATICS

Quarter 1 - Module 4: Properties of Operations on the set of Integers



Mathematics – Grade 7
Alternative Delivery Mode
Quarter 1 – Module 4: PROPERTIES OF OPERATIONS ON SET OF INTEGERS
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 royalties.

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

Writers: Ricky S. Prenio, Ross S. Dignadice, Kurt Jai T. Domaoal, Leo C. Dela Torre

Editors: Cecile S. Dela Rosa, Joven V. Felongco, Mary Jean Nequinto and April Joy
Silva

Reviewers: Evelyn C. Frusa PhD, Noemi E. Parcon
Rolex H. Lotilla and Arvin Tejada

Illustrator:

Layout Artist: Arcadio G. De Jesus III

Management Team: Dr. Allan G. Farnazo, CESO IV - Regional Director

Gilbert B. Barrera – Chief, CLMD

Arturo D. Tingson, Jr. – REPS, LRMS

Peter Van C. Ang-ug – REPS, ADM

Jade T. Palomar – REPS, Mathematics

Belen L. Fajemolin , PhD -CID Chief

Evelyn C. Frusa, PhD – EPS – LRMS

Printed in the Philippines by Department of Education – SOCCSKSARGEN Region

Office Address: Regional Center, Brgy. Carpenter Hill, City of Koronadal
Telefax: (083) 2288825/ (083) 2281893
E-mail Address: region12@deped.gov.ph

7

Mathematics

**Quarter 1 – Module 4:
Properties of Operations
on the set of Integers**

Introductory Message

For the facilitator:

Welcome to the Grade 7 Mathematics Alternative Delivery Mode (ADM) Module on Properties of Operations on the Set of Integers.

This module was collaboratively designed, developed and reviewed by educators both from public and private institutions to assist you, the teacher or facilitator in helping the learners meet the standards set by the K to 12 Curriculum while overcoming their personal, social, and economic constraints in schooling.

This learning resource hopes to engage the learners into guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:



Notes to the Teacher

This contains helpful tips or strategies that will help you in guiding the learners.

As a facilitator you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Furthermore, you are expected to encourage and assist the learners as they do the tasks included in the module.

For the learner:

Welcome to the Mathematics 7 Alternative Delivery Mode (ADM) Module on Properties of Operations on the set of Integers.

The hand is one of the most symbolized part of the human body. It is often used to depict skill, action and purpose. Through our hands we may learn, create and accomplish. Hence, the hand in this learning resource signifies that you as a learner is capable and empowered to successfully achieve the relevant competencies and skills at your own pace and time. Your academic success lies in your own hands!

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:



What I Need to Know

This will give you an idea of the skills or competencies you are expected to learn in the module.



What I Know

This part includes an activity that aims to check what you already know about the lesson to take. If you get all the answers correct (100%), you may decide to skip this module.



What's In

This is a brief drill or review to help you link the current lesson with the previous one.



What's New

In this portion, the new lesson will be introduced to you in various ways such as a story, a song, a poem, a problem opener, an activity or a situation.



What is It

This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.



What's More

This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.



What I Have Learned

This includes questions or blank sentence/paragraph to be filled in to process what you learned from the lesson.



What I Can Do

This section provides an activity which will help you transfer your new knowledge or skill into real life situations or concerns.



Assessment

This is a task which aims to evaluate your level of mastery in achieving the learning competency.



Additional Activities

In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned. This also tends retention of learned concepts.



Answer Key

This contains answers to all activities in the module.

At the end of this module you will also find:

References

This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!



What I Need to Know

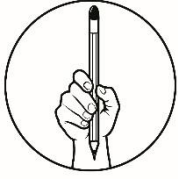
This module was designed and written with you in mind. It is here to help you master the Properties of Operations on the set of Integers. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons 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. Congratulations on making this far! How is your positive-negative journey on the previous module? Have you mastered the rules? This module will provide exciting activities on the Properties of the Operations on Integers. Good luck dear!

The module contains:

- Lesson on Properties of Operations on the set of Integers

After going through this module, you are expected to:

1. illustrate the different Properties of Operations on the set of integers;
 - a. closure
 - b. commutative
 - c. associative
 - d. distributive
 - e. identity
 - f. inverse
2. identify the properties of operations on the set of integers used in the given statement.



What I Know

Let us check your prior knowledge about properties of operations on the set of integers by answering the questions below.

Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

1. Which operation below does not change the value of any nonzero number?
 - A. Adding by One
 - B. Dividing by Zero
 - C. Multiplying by One
 - D. Multiplying by Zero
2. Which of the following property states that changing the order of two numbers that are either being added or multiplied does not change the value?
 - A. Closure property
 - B. Commutative property
 - C. Associative property
 - D. Identity property
3. Which of the following property states that the two integers that are added and multiplied remain as integers? The set of integers is closed under addition and multiplication
 - A. Closure property
 - B. Commutative property
 - C. Associative property
 - D. Distributive property
4. When two numbers have been added / subtracted and then multiplied by a factor, the result will be the same when each number is multiplied by the factor and the products are then added / subtracted.
 - A. Closure property
 - B. Commutative property
 - C. Associative property
 - D. Distributive property
5. Which of the following property states that the sum of any number and 0 is the given number?
 - A. Closure property
 - B. Commutative property
 - C. Associative property
 - D. Identity property

6. Which of the following property is used in the expression $2(3-5) = 2(3) - 2(5)$?
- A. Additive Inverse
 - B. Associative Property
 - C. Additive Identity
 - D. Distributive Property
7. Which of the following does not illustrate Inverse Property?
- A. $5 + 8 = 8 + 5$
 - B. $\frac{1}{2}(2) = 1$
 - C. $(-9) + (9) = 0$
 - D. $(x) + (-x) = 0$
8. Which of the following does not illustrate Distributive Property?
- A. $a(b - c) = ab - ac$
 - B. $4(x + 3) = 4x + 12$
 - C. $3(5 * 6) = (3* 5)6$
 - D. $2(7 - 5) = 14 - 10$
9. Which Property of Multiplication is shown in $(6 + 3) \times 4 = 6(4) + 3(4)$?
- A. Associative Property
 - B. Commutative Property
 - C. Distributive Property
 - D. Inverse Property
10. Which of the following property is used in the expression $4(1+7) = 4 + 28$?
- A. Additive Inverse
 - B. Associative Property
 - C. Additive Identity
 - D. Distributive Property
11. Which property of addition is used in $(4 + 7) + 3 = 4 + (7 + 3)$?
- A. Associative Property
 - B. Commutative Property
 - C. Distributive Property
 - D. Identity Property
12. Which is an example of Identity Property of Addition?
- A. $1 + 3 = 4$
 - B. $2 + 4 = 4 + 2$
 - C. $3 + 0 = 3$
 - D. $5 + (6 + 3) = (5 + 6) + 3$
13. Which of the following does not show the Commutative Property?
- A. $a + 8 = 8 + a$
 - B. $xy = yx$
 - C. $m + n = n + m$
 - D. $3x(4) = 12x$

14. Which property of addition does $5 + 0 = 5$ illustrate?

- A. Commutative Property
- B. Distributive Property
- C. Identity Property
- D. Inverse Property

15. What property of integers justify $12 + 3 = 3 + 12$

- A. Closure property
- B. Commutative property
- C. Identity property
- D. Inverse property

Lesson**1****Properties of Operations on the set of Integers*****What's In***

This module is a continuation of the concepts on the Operations on Integers. Mastering the rules in the previous module will help speed you up in completing this module.

Perform the indicated operations. Apply the rules of the Operations on Integers

1. $12 + 15 = \underline{\hspace{2cm}}$
2. $-21 + (-13) = \underline{\hspace{2cm}}$
3. $14 + (-7) = \underline{\hspace{2cm}}$
4. $(-16) + 9 = \underline{\hspace{2cm}}$
5. $26 - 13 = \underline{\hspace{2cm}}$
6. $-25 - (-11) = \underline{\hspace{2cm}}$
7. $36 - (-20) = \underline{\hspace{2cm}}$
8. $(13)(5) = \underline{\hspace{2cm}}$
9. $(-8)(-6) = \underline{\hspace{2cm}}$
10. $(12)(-7) = \underline{\hspace{2cm}}$
11. $(-9)(8) = \underline{\hspace{2cm}}$
12. $(10) \div (2) = \underline{\hspace{2cm}}$
13. $(-18) \div (-3) = \underline{\hspace{2cm}}$
14. $(-42) \div (7) = \underline{\hspace{2cm}}$
15. $144 \div (-12) = \underline{\hspace{2cm}}$



What's New

Exactly!

Fill the blanks with the correct number that will make it exact.

$$(8 + \underline{\quad}) + \underline{\quad} = \underline{\quad} + (5 + 1)$$

What are the numbers?

What property is illustrated?



What is It

Throughout the discussion, assume that the numbers represented by the letters **a** and **b** are integers. Now, let us start our discussion on the different Properties.

1. Closure Property

Two integers that are added and multiplied remain as integers. The set of integers is closed under addition and multiplication.

- The **Closure Property of Addition** for real numbers states that if **a** and **b** are real numbers, then **a + b** is a unique real number.

Example 1: Adding two real numbers produces another real number.

$$\begin{array}{r} 15 \\ + 16 \\ \hline 21 \end{array}$$

The number "21" is a real number

- The **Closure Property of Multiplication** for real numbers states that if **a** and **b** are real numbers, then $a \times b$ is a unique real number.

Example 2: Multiplying two real numbers produces another real number

$$\begin{array}{r} 26 \\ \times 12 \\ \hline 52 \\ 26 \\ \hline 312 \end{array}$$

The number "312" is a real number.

2. Commutative Property

Changing the order of two numbers that are either being added or multiplied does not change the value.

$$\mathbf{a + b = b + a}$$

$$\mathbf{ab = ba}$$

Examples:

1. $2 + 3 = 3 + 2$, since $2 + 3 = 5$ and also $3 + 2 = 5$.
2. $(-16) + (-5) = (-5) + (-16)$
3. $100 + 99 = 99 + 100$
4. $(2)(3) = (3)(2)$, since $(2)(3) = 6$ and also $(3)(2) = 6$.
5. $(-4)(-15) = (-15)(-4)$
6. $(10)(25) = (25)(10)$

Note: Subtraction and Division are not commutative.

3. Associative Property

Changing the grouping of numbers that are either being added or multiplied does not change its value.

$$\mathbf{(a + b) + c = a + (b + c)}$$

$$\mathbf{(ab) c = a (bc)}$$

Examples:

1. $(2 + 3) + 4 = 2 + (3 + 4)$

Checking:

$$(2 + 3) + 4 = 2 + (3 + 4)$$

$$5 + 4 = 2 + 7$$

$$9 = 9$$

2. $(10 + 5) + 8 = 10 + (5 + 8)$

Checking:

$$(10 + 5) + 8 = 10 + (5 + 8)$$

$$15 + 8 = 10 + 13$$

$$23 = 23$$

3. $(4 \times 3) \times 5 = 4 \times (3 \times 5)$

Checking:

$$(4 \times 3) \times 5 = 4 \times (3 \times 5)$$

$$12 \times 5 = 4 \times 15$$

$$60 = 60$$

4. $(2 \times 10) \times 4 = 2 \times (10 \times 4)$

Checking:

$$(2 \times 10) \times 4 = 2 \times (10 \times 4)$$

$$20 \times 4 = 2 \times 40$$

$$80 = 80$$

Note: Subtraction and Division are not associative.

4. Distributive Property

When two numbers have been added/subtracted and then multiplied by a factor, the result will be the same when each number is multiplied by the factor and the products are then added / subtracted.

$$\mathbf{a(b + c) = ab + ac}$$

$$\mathbf{a(b - c) = ab - ac}$$

Examples:

1. $2(3 + 4) = (2)(3) + (2)(4)$

Checking:

$$2(3 + 4) = (2)(3) + (2)(4)$$

$$2(7) = 6 + 8$$

$$14 = 14$$

2. $5(8 - 3) = (5)(8) - (5)(3)$

Checking:

$$5(8 - 3) = (5)(8) - (5)(3)$$

$$5(5) = 40 - 15$$

$$25 = 25$$

5. Identity Property

A. Additive Identity - states that the sum of any number and 0 is the given number. ***Zero is the additive identity.***

$$a + 0 = a$$

Examples:

1. $4 + 0 = 4$

2. $-10 + 0 = -10$

3. $99 + 0 = 99$

B. Multiplicative Identity - states that the product of any number and 1 is the given number, $a \cdot 1 = a$. ***One is the multiplicative identity.***

$$a \cdot 1 = a$$

Examples:

1. $12 \times 1 = 12$

2. $-32 \times 1 = -32$

3. $99 \times 1 = 99$

6. Inverse Property

A. Additive Inverse - states that the sum of any number and its additive inverse is zero. ***The additive inverse of a positive number is the negative of that number,*** that is

$$a + (-a) = 0.$$

And ***the additive inverse of a negative number is the positive of that number,*** that is

$$-a + a = 0.$$

Examples:

1. $9 + (-9) = 0$

2. $-58 + 58 = 0$

3. $99 + (-99) = 0$

B. **Multiplicative Inverse Property** states that the product of any number and its multiplicative inverse or reciprocal is 1. The multiplicative inverse of the number a is $\frac{1}{a}$.

$$a \cdot \frac{1}{a} = 1$$

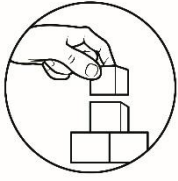
Examples:

1. $6 \cdot \frac{1}{6} = 1$

2. $-22 \cdot \left(-\frac{1}{22}\right) = 1$

3. $\frac{4}{7} \cdot \frac{7}{4} = \frac{28}{28} = 1$

4. $\frac{5}{8} \cdot \frac{8}{5} = \frac{40}{40} = 1$



What's More

A. Identify the property used in each of the statements below.

- $(-7) + 0 = -7$ _____
- $6(3 - 5) = 6(3) - 6(5)$ _____
- $(-8) + (-7) = (-7) + (-8)$ _____
- $(-13) \times 1 = -13$ _____
- $-4 \times \frac{1}{4} = 1$ _____
- $2 \times (4 \times 7) = (2 \times 4) \times 7$ _____
- $11 + (-11) = 0$ _____
- $3(5) = 5(3)$ _____
- $\frac{2}{5} \cdot \frac{5}{2} = 1$ _____
- $(-3)(5 + 9) = (-3)(5) + (-3)(9)$ _____

B. Rewrite the following expressions using the given property.

- | | | |
|----------------------------|-----------------------|-------|
| 1. $8(2 + 5)$ | Distributive Property | _____ |
| 2. $(7 \times 4) \times 3$ | Associative Property | _____ |
| 3. $8 + 5$ | Commutative Property | _____ |
| 4. $-4(1)$ | Identity Property | _____ |
| 5. $25 + (-25)$ | Inverse Property | _____ |

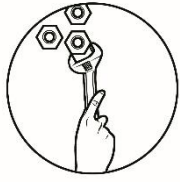


What I Have Learned

To sum it up, let us complete the statements. Choose your answer from the box that best completes the statements below.

$\frac{1}{a}$	order	positive	zero
negative	factor	one	
product	additive inverse	grouping	

1. Commutative Property states that changing the _____ of two numbers that are either being added or multiplied does not change the value.
2. Associative Property states that changing the _____ of numbers that are either being added or multiplied does not change its value.
3. Distributive Property states that when two numbers have been added/subtracted and then multiplied by a _____, the result will be the same when each number is multiplied by the factor and the products are then added /subtracted.
4. Additive Identity Property states that the sum of any number and 0 is the given number. _____ is the additive identity.
5. Multiplicative Identity Property states that the product of any number and 1 is the given number, $a \cdot 1 = a$. _____ is the multiplicative identity.
6. Additive Inverse Property states that the sum of any number and its _____ is zero.
7. The additive inverse of a positive number is the _____ of that number.
8. The additive inverse of a negative number is the _____ of that number.
9. Multiplicative Inverse Property states that the _____ of any number and its multiplicative inverse or reciprocal is 1.
10. The multiplicative inverse of the number ***a*** is _____.



What I Can Do

Here is another activity that lets you apply what you learned about the Properties of Operations on the set of Integers.

A. Identify the properties applied in the following real-life situations:

1. Leo and Kurt order sausage and pepperoni on their pizza.
2. Ricky went to the supermarket and buy ice cream for 12 pesos, bread for 8 pesos, and milk for 15 pesos. How much money does he owe the cashier?
3. Ross was doing his math homework while I was finishing my science reading.
4. Grace Joy has 8 notebooks and her brother has 6. If we double both amount, how many do they now have altogether?
5. A personal driver's license number.
6. During a physical exam, Noemi's doctor checked her blood pressure, blood sugar level, and heart rate.
7. Boni first poured a bag of cement into a bucket along with some gravel, then added water to this mixture; everything will work out fine.
8. The person's thumbmark is a unique identification.
9. Jay-ar has 10 boxes of canned goods and his best friend Michelle has 5 boxes of canned goods. If we tripled their donations, what is the total number of their donations?
10. The set of even natural numbers, $[2, 4, 6, 8 \dots]$, is closed with respect to addition because the sum of any two of them is another even natural number, which is also a member of the set.

Great work! You did a good job in applying what you have learned!



Assessment

I hope you had a good time going over this module. For you to determine how much you've learned, please answer the questions by choosing the letter of the best answer.

1. Which of the following property is used in the expression $1 + 4 = 5$?
 - A. Additive Inverse
 - B. Associative Property
 - C. Closure Property
 - D. Commutative Property
2. Which property of addition is used in $4 + 0 = 4$?
 - A. Associative Property
 - B. Commutative Property
 - C. Distributive Property
 - D. Identity Property
3. Which is an example of Inverse Property of Addition?
 - A. $(-5) + (5) = 0$
 - B. $2(-3) = (-2)(3)$
 - C. $3 + 0 = 3$
 - D. $4 + (1 + 3) = (4 + 1) + 3$
4. Which of the following does not show Distributive Property?
 - A. $4(2 - 7) = 4(2) - 4(7)$
 - B. $5(x + 3) = 5x + 15$
 - C. $a(b + c) = a + (b + c)$
 - D. $a(3 + 4) = 3a + 4a$
5. Which property of addition does $(-x) + x = 0$ illustrate?
 - A. Commutative Property
 - B. Distributive Property
 - C. Identity Property
 - D. Inverse Property
6. Which of the following does not illustrate Associative Property?
 - A. $4(5 \times 3) = 4(5) \times 4(3)$
 - B. $2(3 \times 7) = (2 \times 3)7$
 - C. $5 + (3 + 8) = (5 + 3) + 8$
 - D. None of the above
7. Which of the following states that the sum of any number and 0 is the given number?
 - A. Additive Identity Property
 - B. Additive Inverse Property
 - C. Multiplicative Identity Property
 - D. Multiplicative Inverse Property

8. Which of the following does not illustrate Multiplicative Identity Property?

A. $\left(\frac{3}{4}\right)\left(\frac{4}{3}\right) = 1$

B. $(-9)(1) = -9$

C. $\frac{1}{2} = \left(\frac{1}{2}\right)(1)$

D. $(m)(1) = m$

9. Which Property is shown in $(-x) + (-1) = (-1) + (-x)$?

A. Associative Property

B. Commutative Property

C. Distributive Property

D. Inverse Property

10. What is the additive inverse of x ?

A. $\frac{1}{x}$

B. $-x$

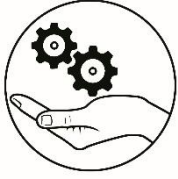
C. x^{-1}

D. 1

For numbers 11- 15, rewrite the following expressions using the given property.

11. $5a - 3a$	Distributive Property	_____
12. $(8x)y$	Associative Property	_____
13. $(-9) + 3$	Commutative Property	_____
14. $12(1)$	Identity Property	_____
15. $17 + (-17)$	Inverse Property	_____

Good Job! You did well on this module! Keep going!



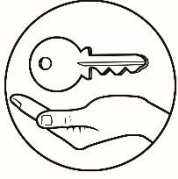
Additional Activities

A. Identify the Properties being described below.

1. When three or more numbers are multiplied, the product is the same regardless of the order of the multiplicands. _____
2. Multiplying any number by zero yields to zero . _____
3. Adding 0 to any number leaves it unchanged. _____
4. The multiplicative inverse of x is $\frac{1}{x}$ so that $x(\frac{1}{x}) = 1$. _____
5. When two numbers are added, the sum is the same regardless of the orders of the addends. _____

B. Fill in the blanks and determine what properties were used to solve the equations.

1. $6(\underline{\quad} + 3) = 0$ _____
2. $\frac{3}{4} + \underline{\quad} = 0$ _____
3. $-5 + 0 = \underline{\quad}$ _____
4. $(-8 + 8) + 5 = \underline{\quad}$ _____
5. $5(a + 7) = 5a + \underline{\quad}$ _____



Answer Key

<p style="text-align: center;">What I Know</p> <ol style="list-style-type: none"> 1. C 2. B 3. A 4. C 5. D 6. D 7. A 8. C 9. C 10. D 11. A 12. C 13. D 14. C 15. B 	<p style="text-align: center;">What's In</p> <ol style="list-style-type: none"> 1. 27 2. -34 3. 14 4. -7 5. 13 6. -14 7. 56 8. 65 9. 48 10. -84 11. -72 12. 5 13. 6 14. -6 15. -12 	<p style="text-align: center;">What's More</p> <ol style="list-style-type: none"> 1. Additive Identity 2. Distributive 3. Commutative 4. Multiplicative Identity 5. Multiplicative Inverse 6. Associative 7. Additive Inverse 8. Commutative 9. Multiplicative Inverse 10. Distributive <p>B.</p> <ol style="list-style-type: none"> 1. $8(2 + 5) = 8(2) + 8(5)$ 2. $(7 \times 4) \times 3 = 7 \times (4 \times 3)$ 3. $8 + 5 = 5 + 8$ 4. $-4(1) = -4$ 5. $25 + (-25) = 0$
--	--	---

<p style="text-align: center;">What have I learned</p> <ol style="list-style-type: none"> 1. Order 2. Grouping 3. Factor 4. Zero 5. one 6. additive inverse 7. negative 8. positive 9. product 10. $\frac{1}{a}$ 	<p style="text-align: center;">What can I do</p> <ol style="list-style-type: none"> 1. Commutative Property 2. Associative Property 3. Commutative 4. Distributive Property 5. Identity Property 6. Commutative Property 7. Associative Property 8. Identity Property 9. Distributive Property 10. Closure Property 	<p style="text-align: center;">Additional Activities</p> <ol style="list-style-type: none"> 1. Associative Property 2. Zero Property 3. Additive Identity 4. Multiplicative Inverse 5. Commutative Property <p>B.</p> <ol style="list-style-type: none"> 1. -3 Additive Inverse 2. $-\frac{3}{4}$ Additive Inverse Property 3. -5 Additive Identity 4. 5 Additive Inverse 5. 35 Distributive Property
--	--	---

15.	0
14.	12
13.	3 + (-9)
12.	8(xy)
11.	a (5 - 3)
10.	B
9.	B
8.	A
7.	A
6.	A
5.	D
4.	C
3.	A
2.	D
1.	C
Assessment	

References

Mathematics – Grade 7 Learner’s Material First Edition, 2013, ISBN: 978-971-9990-60-4, pp 34-41

Nivera, Gladys C., Grade 7 Mathematics: Patterns and Practicalities. Salsiana Books by Don Bosco Press Inc. , pp 70-71

Math-Aids.Com Properties Worksheets | Properties of Mathematics Worksheet

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