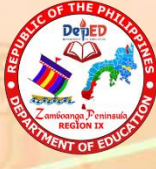
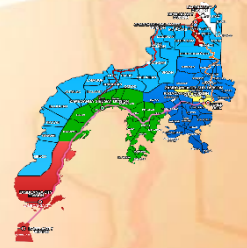




Republic of the Philippines
Department of Education
Regional Office IX, Zamboanga Peninsula



6



Zest for Progress
Zeal of Partnership

Mathematics

Quarter 2 - Module 4: Algebraic Expressions and Equations



Name of Learner: _____

Grade & Section: _____

Name of School: _____

JANUARY
Matuguhon

FEBRUARY
Mahiguimaon

MARCH
Matinabungan

APRIL
Matinahuron

MAY
Makapsay og Malimpyo

JUNE
*Maabtik og Masunod sa
Dhaklong Oras*

JULY
Maantigo og Maabilidad

AUGUST
*Maginhuhunon
para sa Uban*

SEPTEMBER
Madaginaton

OCTOBER
Matinud-anon

NOVEMBER
Masaligan

DECEMBER
Maalampon



What I Need to Know

The module contains only one lesson:

Lesson 4 – Applying Knowledge of Expressions and Equations in Mathematical Problems and Real-Life Situations

After going through this module, you are expected to:

1. Represent quantities in real-life situations using algebraic expressions and equations.
2. Solve routine and non-routine problems involving different types of numerical expressions and equations such as $7 + 9 = _ + 6$.



What I Know

Directions: Encircle the letter of the correct answer.

1. Mother gave you 25 pesos every day for your snacks in September. You saved 5 pesos per day. How much money will you saved after m days?
 - a. $m + 5$
 - b. $5m$
 - c. $m - 5$
 - d. $m/5$
2. Karen bakes the same number of cookies each day in her bakery. Write an expression to represent the total number of cookies Karen bakes in a week. Let c is equal to the number of cookies Karen bakes each day.
 - a. $c + 7$
 - b. $7c$
 - c. $c \div 7$
 - d. $7c + 1$
3. Twice Kiko's age, increased by 4 is 22.
 - a. $2k + 4 = 22$
 - b. $2 + 4k = 22$
 - c. $2 + 4 + k = 22$
 - d. $2k = 22 + 4$
4. Alexa caught 11 fishes and then ate some. Write an expression to represent the number of fishes Alexa have left.
 - a. $f - 11$
 - b. $11 - f$
 - c. $f + 11$
 - d. $11 + f$

5. The age of Marnie's father is thrice her age decreased by 2. Write an expression to represent the age Marnie's father. Use m as the variable for Marnie's age.

- a. $3 + m - 2$
- b. $m - 3 + 2$
- c. $2m - 3$
- d. $3m - 2$

6. Precy is 12 years old. Her father is 6 years more than twice her age. How old is her father?

- a. 25 year-old
- b. 30 year-old
- c. 34 year-old
- d. 40 year-old

7. Twice Cerilo's age, increased by 4 is 22. How old is Cerilo after 3 years?

- a. 9 year-old
- b. 10 year-old
- c. 12 year-old
- d. 13 year-old

For item number 8- 9.

A baby named April is 70 cm tall. Leah's height is 2 cm less than twice April's height. How tall is Leah?

8. What is asked in the problem? Height of ...

- a. Leah
- b. April
- c. mother
- d. father

9. What is the answer of the problem?

- a. 72 cm
- b. 80 cm
- c. 138 cm
- d. 142 cm

10. There are 12 animals in the pet store. Some are parrots and some are cats. There are 34 legs in all. How many parrots and how many cats are there?

- a. 5 parrots and 7 cats
- b. 6 parrots and 6 cats
- c. 7 parrots and 5 cats
- d. 8 parrots and 4 cats



What's In

Activity 1: Where I belong!

Directions: Write the following keywords in the box where they belong.

divided by	the product of	diminished by	more than
increased by	twice	the ratio of	the sum of
decreased by	of		

ADDITION	SUBTRACTION	MULTIPLICATION	DIVISION



What's New

Understand Me!

Scout Leader Quiroga conducted a Basic Training Course for Patrol Leaders of Cluster B with 120 boy scouts, 15 fewer than last week's basic training course in Cluster A. What is the algebraic equation for the number of boy scouts attended the training in Cluster A? How many boy scouts attended the training in Cluster A?

- 1) What is the all about?
- 2) Who conducted the training?
- 3) What values do you think you can learn from scouting?
- 4) What is the algebraic equation for the number of boy scouts attended the training in Cluster A?
- 5) How many boy scouts attended the training in Cluster A?



What is it

Remember me!

Question 4: What is the algebraic equation for the number of boy scouts attended the training in Cluster A?

To represent the quantities unknown in the problem, decide on what variable you are going to use. Remember that we can use any letter as our variable.

So, let us use variable **a** representing the number of the boy scouts attended the training in Cluster A. In the problem Cluster B is 15 fewer than Cluster A. If we are going to rephrase it, that is....

$$\underbrace{120}_{120} \quad \underbrace{\text{is}}_{=} \quad \underbrace{15 \text{ fewer than } a}_{a - 15}$$

Our algebraic equation is.... $120 = a - 15$

Question 4: How many boy scouts attended the training in Cluster A?

In solving the problem, let us use the Polya's Principle.

Step 1: Understand the problem. (Understand)

- a. What is/are asked in the problem?
 - What is the algebraic equation for the number of boy scouts attended the training in Cluster A?
 - How many boy scouts attended the training in Cluster A?
- b. What are given in the problem?
 - 120 boy scouts
 - 15 fewer than last week's basic training course in Cluster A

Step 2: Device a Plan. (Plan)

- a. What operation/s is/are going to use in the problem?
 - Addition/Subtraction
- b. What the number sentence?
 - $120 = a - 15$ or $120 + 15 = a$

Step 3: Carry Out the Plan.(Solution)

- a. Solve the Problem/ Give the solution.
 - $120 = a - 15$
 - Using the Addition Property of Equality, we will add 15 to both sides of the equation.
 - $120 + (15) = a - 15 + (15)$
 - $135 = a$
 - Therefore, the answer is **135 boy scouts** attended the training in Cluster A.

Step 4: **Look Back/Check.**

- Let us now check if our answer is correct, let us substitute 135 to a in our equation $120 = a - 15$.
- $120 = 135 - 15$
- $120 = 120$
- Therefore, our answer is correct which is 135 boy scouts



What's More

Activity 2: Teach Me

Directions: Solve the problem using the table below, follow **Polya's Step** in solving the problem.

Daphnie weighed 81.5 kilograms after losing 2.6 kilograms. What is Daphnie's original weight?

Step 1. Understand	Step 3. Solution
Step 2. Plan	Step 4. Check



What I Have Learned

Activity 3: Fill me up!

Directions: Complete the following statements using appropriate words or phrases to describe each member of your family. Then write an equation or expression to represent the statement or sentence formed. You may use any variables of your choice.

1. My father is _____. He is _____ than my mother.
(Name of your father) (mathematical word/phrase)

Expression or Equation: _____

2. _____ is my lovely mother. Her age is _____ as my age.
(Name of your mother) (mathematical word/phrase)

Expression or Equation: _____

- (Optional) 3. My dear _____ is _____ older/younger than me.
(Name of your brother) (mathematical word/phrase)

Expression or Equation: _____

- (Optional) 4. My dear _____ is _____ older/younger than me.
(Name of your sister) (mathematical word/phrase)

Expression or Equation: _____

5. We love to eat _____ which is _____ cheaper than _____.
(Name of food) (mathematical word/phrase) (Name of food)

Expression or Equation: _____



What I Can Do

Activity 4: Match Me

Directions: Read and understand each statement carefully. Match column A with column B.

Column A	Column B
_____ 1. Franz earns 50 pesos for each hour he works.	A. $3m-2$
_____ 2. A sliced of pizza will cost 28 pesos. Each additional toppings will cost 5 pesos.	B. $5m + 20$
_____ 3. His number of mangoes harvested is 5 times increased by 20.	C. $50h$
_____ 4. I am 2 years younger than thrice the age of my eldest daughter. How old is my daughter if I am now 40 years old?	D. 14 year-old
_____ 5. What is the algebraic expression of item number 4 using m as your variable for the age of the eldest daughter.	E. $28p + 5t$
	F. $20m + 5$



Assessment

Activity 5: How far have I learned!

Direction: Encircle the letter of the correct answer.

- Leonil runs the same number of kilometers each day. Write an expression to represent the number of kilometers Leonil ran in September last year.
 - $30k$
 - $30 + k$
 - $k - 30$
 - $k \div 30$
- Peter, James and John harvested 21 mangoes in a farm. They share in three consecutive numbers respectively. Write an equation representing on how they share the mangoes using "x" as the variable.
 - $x + x + x = 21$
 - $x + (x+1) + (x+2) = 21$
 - $(x+1) + (x+2) + (x+3) = 21$
 - $x + 2x + 3x = 21$
- The girl scouts were tasked to cook rice in a bamboo by patrol, they were given 40 minutes to do the task, Sampaguita Patrol was able to do **m** minutes ahead of time. Write an expression to represent the number of minutes Sampaguita Patrol finished the task.
 - $m - 40$
 - $m + 40$
 - $40 - m$
 - $40 + m$
- Maricel works in a massage parlor that charges 250 pesos per client. How much money left to her if she was able to massage 5 clients and gave some share to massage parlor's owner? Write an expression to represent the amount of money left to the massage therapist. Use **p** as the variable for the share of the massage parlor owner.
 - $p + (250 \times 5)$
 - $p - (250 + 5)$
 - $(250 \times 5) - p$
 - $(250 \div 5) + p$
- It will cost 15 pesos to ride a tricycle and 5 pesos for every succeeding kilometer travelled. Write an expression on how much will you pay if you travelled k kilometers.
 - $15k + 5$
 - $5k + 15$
 - $2m - 3$
 - $3m - 2$

For items 6- 7.

A number is divisible by 4 if the last two digits ends with two zeros or the last two digits is divisible by 4. If the sum of all digits is divisible by 9, that number is divisible by 9.

6. What are the possible values of “a” if four- digit number **2a9b** is divisible by both 4 and 9?
- a. 1 and 5
 - b. 2 and 5
 - c. 3 and 5
 - d. 4 and 5
7. What are the possible values of “b” if four- digit number **2a9b** is by both 4 and 9?
- a. 2 and 4
 - b. 2 and 5
 - c. 2 and 6
 - d. 2 and 8
8. Twice Eugenio’s age, increased by 4 is 22. How old is Eugenio?
- a. 9 year-old
 - b. 10 year-old
 - c. 12year-old
 - d. 13 year-old

For item number 9- 10.

Peter, James and John harvested 21 mangoes in a farm. They share in three consecutive numbers respectively.

9. Who has the greatest share?
- a. Peter
 - b. James
 - c. John
 - d. Peter and James
10. How many mangoes does James have?
- a. 5
 - b. 6
 - c. 7
 - d. 8

Additional Activities

Directions: Draw a circle to illustrate your answer in the problem. Draw a line showing the opposite positions.

Mr. Flores told some PE students to form a circle evenly. If the 3rd student is directly opposite to the 10th student, how many students are there in Mr. Flores PE class forming a circle.

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