



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



- JANUARY**
Matuguhon
- FEBRUARY**
Mahiguagmanon
- MARCH**
Matinabangan
- APRIL**
Matinahuron
- MAY**
Makapsay og Malimpyo
- JUNE**
*Maablik og Masunod sa
Dhasaklong Oras*
- JULY**
Maantigo og Maabilidad
- AUGUST**
*Maginhuhuhunon
para sa Uban*
- SEPTEMBER**
Madaginaton
- OCTOBER**
Matinud-anon
- NOVEMBER**
Masaligan
- DECEMBER**
Maalampon

6



Zest for **P**rogress
 Zeal of **P**artnership

Mathematics 6

Quarter 3 –Module 3

Expression and Equations in Real-Life Situation



Name of Learner: _____

Grade & Section: _____

Name of School: _____



What I Need to Know

The module contains one lesson:

Lesson 3: Translating Verbal Expressions in Real-life Situations and Defining a Variable in an Algebraic Expression.

In this module, you are expected to:

1. Give the translation of real-life verbal expressions and equations into letters or symbols and vice versa.
2. Define a variable in an algebraic expression



What I Know

Directions: Encircle the letter of the correct answer.

1. What is a variable?
 - A. Any letter or symbol that represents a number
 - B. Any number or symbol that represents a letter
 - C. Any expressions that combines numbers
 - D. A fixed value that does not change
2. A mathematical phrase that uses variables, numerals, and operation symbols is called_____
 - A. numerical expression
 - B. constant
 - C. variable
 - D. algebraic expression
3. A mathematical sentence with an equal sign is called_____.
 - A. numerical expression
 - B. variable
 - C. algebraic expression
 - D. equation
4. Translate this phrase into an algebraic expression.
If nine is added to the difference of a number and nineteen, the sum is ninety
 - A. $b - 19 + 9 = 90$
 - B. $b + 19 - 9 = 90$
 - C. $b \div 19 + 9 = 90$
 - D. $b \times 19 + 9 = 90$

5. Translate this phrase into an algebraic expression.

m increased by 3

- A. $m + 3$
- B. $m \div 3$
- C. $m - 3$
- D. $m \times 3$

6. Translate $(b + 8) \div 2$ into verbal expression.

- A. the sum of a number and eight divided by two
- B. the difference of a number and eight divided by two
- C. the quotient of a number and eight divided by two
- D. the product of a number and eight divided by two

7. Translate **Six more than twice a number** into algebraic expression.

- A. $2a + 6$
- B. $2a - 6$
- C. $2a \times 6$
- D. $2a \div 6$

8. How to translate word phrases into algebraic expression?

- A. by familiarizing the words and phrases associated with symbols or operations
- B. by familiarizing the symbols or operations
- C. by familiarizing the keywords to be used
- D. by familiarizing the word phrases

9. Which is **NOT** an equation?

- A. $56/w - 2 = 3$
- B. $5(b + 28) = 150$
- C. $2x + 3 = 17$
- D. five times a number

10. Which is an expression?

- A. $2x + y$
- B. $5n + 2 = 30$
- C. $16 - 3n = 10$
- D. $7(X + 6) = 49$



What's In

Activity 1: Find My Match

Directions: Match the following word phrases to its corresponding algebraic expressions.
Write the answer on the space provided for.

	Column A	Column B
____ 1.	five more than x	A. $k-6$
____ 2.	thrice z	B. $3z$
____ 3.	w divided by 2	C. $w/2$
____ 4.	m increased by ten	D. $x+5$
____ 5.	k less than 6	E. $m+10$
____ 6.	2 times w	F. $n-11$
____ 7.	11 less than n	G. $2w$
____ 8.	3 more than m	H. $m + 3$
____ 9.	the total of 24 and a number x	I. $y - x$
____ 10.	x less than y	J. $24 + x$

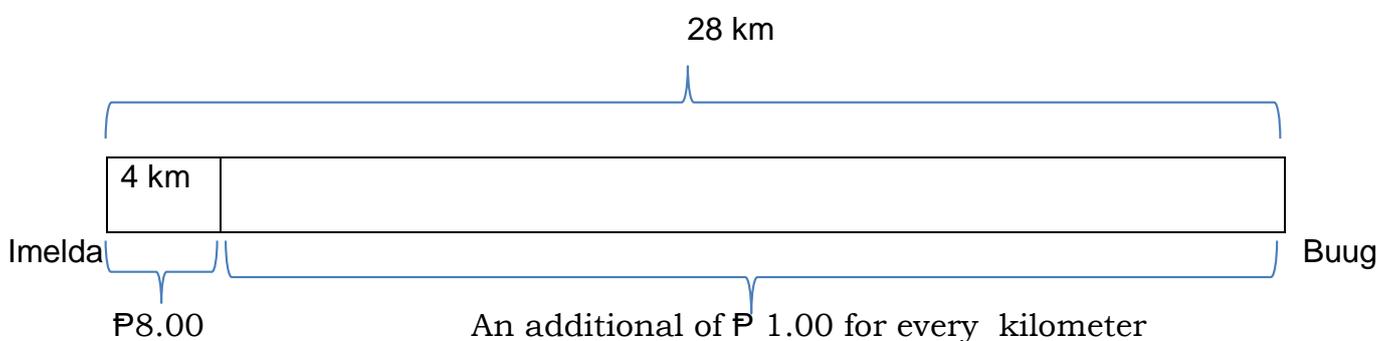


What's New

Activity 2: Solve me Wisely

Imagine a fare for the first 4 km is ₱8.00 and an additional of ₱ 1.00 for every kilometer. Virgie will go to the GSP Camp from Imelda to Buug to attend the basic training and the distance is about 28 km. How much does she need to pay?

Study this illustration



► What algebraic expression will be used to solve the problem?

In the first 4 km is ₱8.00, we need to find the amount of fare for the remaining distance to get the amount which Virgie needs to pay. The remaining distance is 24km. Let y =the fixed amount of ₱1.00 for every kilometre. To find the total amount fare, we will use the expression $24y + 8$.

Evaluate: $24y + 8$

$$24(1) + 8 = 32$$

Therefore, Virgie needs to pay ₱32.00



What is it

Translating Word Phrases into Algebraic Expression

To translate word phrases into algebraic expressions, familiarity with words and phrases associated with symbols or operations are important. The table below lists some keywords that are used to describe common mathematical equations.

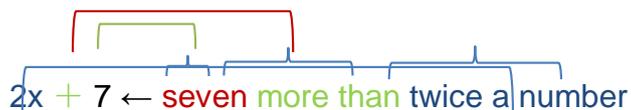
Symbol	Key words/phrases
+	addition, plus, sum of, more than, added to, increased by, the total of
-	subtraction, minus, the difference of, less than, decreased by, diminished by, subtracted from, less
$\times, *, ()$	multiplication, times, the product of, multiplied by, of
$\div, /$	division, divided by, the quotient of, the ratio of
=	is equal to, equals, is, is the same as

Study how the different word phrases can be translated or written as algebraic expression.

Word Phrases	Algebraic Expression
<p>m plus 3</p> <p>the sum of m and 3</p> <p>m increased by 3</p> <p>3 added to m</p> <p>3 more than m</p> 	<p>$m + 3$</p>
<p>n minus 1</p> <p>the difference of n and 11</p> <p>n decreased by 11</p> <p>n diminished by 11</p> <p>11 less than n</p> <p>n less 1</p> <p>11 subtracted from n</p> 	<p>$n - 11$</p>
<p>2 times w</p> <p>twice of w</p> <p>w multiplied by 2</p> <p>the double of w</p> <p>the product of 2 and w</p> 	<p>$2w$</p>
<p>x divided by 5</p> <p>one-fifth of x</p> <p>the quotient of x and 5</p> <p>the ratio of x to 5</p> 	<p>$x/5$</p>

Example 1. Translate to algebraic expression: Seven more than twice a number.

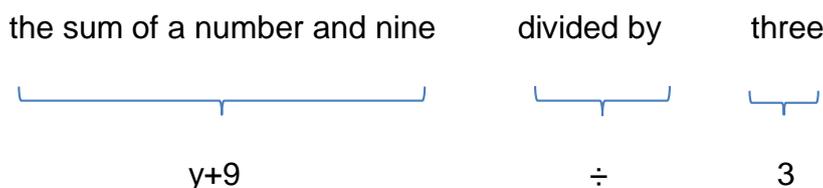
Let x = the number



Algebraic expression: $2x + 7$

Example 2: Translate to algebraic expression. The sum of a number and nine divided by three

Let y = the number

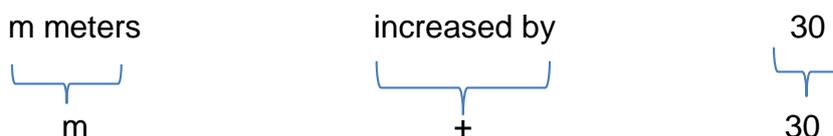


Algebraic expression: $(y + 9) \div 3$ or $y + 9/3$

Applications and Problem Solving

Example 3. A kite is flying at an altitude of m meters.

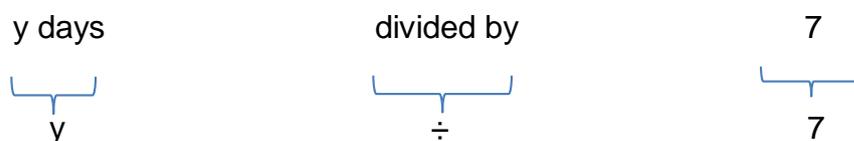
Express algebraically its new altitude after rising for 30 meters.



Algebraic expression: $m + 30$

Example 4. Express the number of weeks in terms of y days.

1 week = 7 days



Algebraic expression: $y \div 7$ or $y/7$

Maricel buys 5 star apples for ₱5.00 each, 3 guyabanos for ₱5.00 each and 3 guyabanos for ₱32.50 each. She gives the cashier a ₱200.00 bill. Write an expression for the total cost of the fruits she buys and an equation for the amount of change the cashier should give to her.

Let us use variables to represent the price of each fruit.

Let: m be the price of each star apple which is ₱5.00

n be the price of each guyabano which is ₱32.50

p be the amount of change

Now translate the phrases:

$\underbrace{5 \text{ star apples for ₱5.00 each}}_{5m}$

 $\underbrace{\text{plus}}_{+}$

 $\underbrace{3 \text{ guyabanos for ₱32.50 each}}_{3n}$

Algebraic Expression: $5m + 3n$ ← This represents the total cost of 5 star-apples for ₱5.00 each and 3 guyabanos for ₱32.50 each.

$\underbrace{200}_{200}$

 $\underbrace{\text{minus}}_{-}$

 $\underbrace{\text{total cost of the fruits}}_{(5m + 3n)}$

 $\underbrace{\text{is}}_{=}$

 $\underbrace{\text{the amount of change}}_{p}$

Algebraic Equation: $200 - (5m + 3n) = p$ ← The amount of $5m + 3n$ when subtracted from ₱200.00 bill will result to the amount of change (p)



What's More

Activity 3: Level up

A. Write an algebraic expression for each word phrase on the space provided for.

Word Phrases	Algebraic Expression
1. eighteen fewer than the number last week is 134	
2. sixty-six subtracted from a number p	
3. the quotient of twenty-nine and a number h	

B. Match column A to column B.

Algebraic Expression	Word Phrases
___ 1. $28 + k$	A. The difference between a number and 2.
___ 2. $f - 2$	B. r increased by 9
___ 3. $r + 9$	C. A number k added to 28
	D. r twice 9



What I Have Learned

Activity 4: Fill me up

A. Directions: Translate the following word phrases into algebraic expression. Write your answer on the line.

1. Five more than x _____
2. the product of 52 and a number c _____
3. The sum of forty-five and a number r _____
4. A number v to the power of sixty-five _____
5. The quotient of a number t and thirty-seven _____

B. Directions: Translate each algebraic expression into word phrases. Write your answer on the space provided for.

- 1.) $9 + x$ _____
- 2.) $14 - p$ _____
- 3.) $t - 7$ _____
- 4.) $9n$ _____
- 5.) $2x$ _____



What I Can Do

Activity 5: Pick me up and Shoot me inside the box

Directions: Translate the following word phrases into algebraic expressions and vice versa . Choose your answer inside the box and write it on the space provided for.

$X + 7$	half of a number
$2p$	nine added to number x
$4/w$	n less than 3
$h - 8$	fifteen times a number p
$2x + 6$	three multiplied by a number g

1. the sum of a number and 7
2. the quotient of 4 and a number
3. the difference of a number and 8
4. six more than twice a number
5. The product of 2 and a number

6. $x + 9$

7. $e / 2$

8. $15p$

9. $3 - n$

10. $3g$



Assessment

Directions: Read each item carefully. Encircle the letter of the correct answer.

1. Any letter or symbol that represents a number is called _____.

- A. Constant B. Variable C. Equation D. Expression

2. What is an algebraic expression?

- A. Mathematical phrase that uses variables, numerals, and symbols
 B. Mathematical phrase that do not use variables
 C. Mathematical phrase that only use variables
 D. Mathematical phrase that uses variables and symbols
 E.

3. Translate to algebraic expression: Eighteen less than half a number.

- A. $\frac{1}{2}n - 18$ ← Eighteen less than half a number
 B. $\frac{1}{2}n - 18$ ← Eighteen less than half a number
 C. $\frac{1}{2}n - 18$ ← Eighteen less than half a number
 D. $\frac{1}{2}n - 18$ ← Eighteen less than half a number

4. Illustrate this word phrase into algebraic expression: The sum of a number and 5 is twelve.

A. a number plus five is twelve
 $\underbrace{\hspace{2cm}}_a$ $\underbrace{\hspace{1cm}}_+$ $\underbrace{\hspace{1cm}}_5$ $\underbrace{\hspace{1cm}}_=$ $\underbrace{\hspace{1cm}}_{12}$

B. a number plus five is twelve
 $\underbrace{\hspace{2cm}}_5$ $\underbrace{\hspace{1cm}}_+$ $\underbrace{\hspace{1cm}}_a$ $\underbrace{\hspace{1cm}}_{12}$ $\underbrace{\hspace{1cm}}_=$

C. a number plus five is twelve
 $\underbrace{\hspace{2cm}}_+$ $\underbrace{\hspace{1cm}}_=$ $\underbrace{\hspace{1cm}}_a$ $\underbrace{\hspace{1cm}}_{12}$ $\underbrace{\hspace{1cm}}_5$

D. a number plus five is twelve
 $\underbrace{\hspace{2cm}}_=$ $\underbrace{\hspace{1cm}}_+$ $\underbrace{\hspace{1cm}}_5$ $\underbrace{\hspace{1cm}}_a$ $\underbrace{\hspace{1cm}}_{12}$

5. Translate this phrase into an algebraic expression.

The sum of 7 times a number and three

- A. $7P-3$
- B. $P/3$
- C. $3P$
- D. $7P+3$

6. Translate this phrase into an algebraic expression.

X increased by 3

- A. $X + 3$
- B. $X - 3$
- C. $X \div 3$
- D. $X \times 3$

7. What is $(a + 10) \div 2$ in word phrase?

- A. the sum of a number and ten divided by two
- B. the difference of a number and ten divided by two
- C. the quotient of a number and ten divided by two
- D. the product of a number and ten divided by two

7. Eight more than twice a number in algebraic expression is _____.

- A. $2a + 8$
- B. $8a + 2$
- C. $2a + 8a$
- D. $8a + 8$

8. How to translate word phrases into algebraic expression?

- A. take words and turn into math symbols
- B. take symbols and turn into word phrases
- C. use math symbols
- D. change math symbols into words

9. Which of the following is NOT an algebraic expression?

- A. $c + 49$
- B. c multiplied by 11 is 44
- C. $5x-3= 42$
- D. five times a number is fifty

10. Which of the following is a word phrase?

- A. twice x
- B. $5x + 2$
- C. $8 - 3x$
- D. $2 (X + 8)$

Additional Activities

Zip Away With Algebraic Expression

Directions: Read each description below, and find the matching expression in the boxes above. Write the item number on the line in the box that has the correct answer.

1. _____ $X+3$	2. _____ $X+11$	3. _____ $9-x$	4. _____ $14x$
5. _____ $2x$	6. _____ $x/7$	7. _____ $8x$	8. _____ $10/x$

- 1. Ten divided by a number
- 2. The product of fourteen and a number
- 3. Eight times a number
- 4. Nine less a number
- 5.
- 5. The quotient of a number and seven
- 6. Eleven added to a number
- 7. Twice a number
- 8. A number plus three

References

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